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Relational Embeddedness in Mentoring Relationships
Between Prospective K-12 Education Leaders
and Their Mentor Principals

Maridee Beeston

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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ABSTRACT

Relational Embeddedness in Mentoring Relationships Between Prospective K-12 Education Leaders and Their Mentor Principals

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Prospective education leaders face challenges in a demanding environment often lacking critical resources necessary to make a difference in schools. The potential to acquire these resources may be found in the mentoring relationships formed during internships in educational leadership preparation programs. A lack of understanding exists regarding variations in the nature of these mentoring relationships—specifically in terms of relational embeddedness—the type and degree to which partners form ties embedded within a social relationship. Variations in relational embeddedness may impact mentoring quality and the potential to acquire the resources needed to succeed in demanding school environments.

Theoretical frameworks in mentoring and social network theory were used in this quantitative study to examine the nature of relational embeddedness and its association with a variety of internal and external factors, which may influence the potential relational embeddedness developed in these relationships. Internal factors such as sex and behavior characteristics of both the perspective education leaders and their mentor principals, as well as previous relationship history were among the variables associated with relational embeddedness.

This study lays theoretical groundwork and suggests directions for future research regarding relational embeddedness as a means to influence the mentoring quality needed to acquire resources for effective school leadership outcomes. This study also provides practical implications for administrators in educational leadership preparation programs regarding the multidimensional nature of relational embeddedness and the internal and external factors associated with its development.

Keywords: mentoring, social network theory, relational embeddedness, educational leadership preparation

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This work is evidence that mentoring matters. Thank you to my parents whose mentoring lights the way; to my sisters and brothers who engage in the mutual benefits of mentoring; to our children who experience mentoring as a developmental and dynamic phenomenon; to my chair, Julie Hite, whose countless contributions led to full relational embeddedness; to my companion, Greg, who moves heaven and earth to mentor my dreams; and finally eternal gratitude to *The Mentor* who magnifies us all.

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DESCRIPTION OF STRUCTURE AND CONTENT

This manuscript, *Relational Embeddedness in the Mentoring Relationships of Prospective K-12 Education Leaders and Their Mentor Principals*, is presented in the format of the hybrid dissertation. The hybrid format focuses on producing a journal-ready manuscript considered by the dissertation committee to be ready for submission. Therefore, this dissertation has fewer chapters than the traditional format, and focuses on the presentation of the scholarly article. This hybrid dissertation includes an extended review of literature in Appendix A and a methods section with elaborated detail on the research approach in Appendix B.

The targeted journal for this dissertation, *Educational Administration Quarterly (EAQ)*, (ranked as a Tier 1 journal according to the BYU Department of Educational Leadership & Foundations based on: IMPACT Factor = 1.326, H5-index = 43, SJR indicator = 1.91, SJR Quartile = 1), focuses on current and significant research centered on leadership issues of educational organizations including educational leadership preparation programs. The journal promotes the publication of rigorous and relevant scholarly work on emergent methods and issues. Therefore, this journal is a good fit for this study that examines the nature of relational embeddedness in the mentoring relationships between prospective education leaders and their mentor principals in educational leadership preparation program internships.

Articles submitted to *EAQ* undergo an electronic submission and review process (<http://mc.manuscriptcentral.com/eaq>). A typical manuscript includes a structured abstract (250 words) and should be between 25 to 40 pages of text in length, with additional pages for tables and figures positioned after the references. The target audience for *EAQ* is educators and administrators interested in addressing the impact of diverse forms of leadership preparation as a way to more effectively prepare school leaders and improve student achievement.

Article Abstract

Please note that the following abstract conforms to the format and content requirements of EAQ.

Purpose. Prospective education leaders face challenges in a demanding environment often lacking critical resources necessary to make a difference in schools. The potential to acquire these resources may be found in the mentoring relationships formed during internships in educational leadership preparation programs. A lack of understanding exists regarding variations in the nature of these mentoring relationships—specifically in terms of relational embeddedness—the type and degree to which partners form ties embedded within a social relationship. Variations in relational embeddedness may impact mentoring quality and the potential to acquire the resources needed to succeed in demanding school environments.

Methods. Theoretical frameworks in mentoring and social network theory were used in this quantitative study to examine the nature of relational embeddedness and its association with a variety of internal and external factors which may influence the relational embeddedness developed in these relationships.

Findings. Internal factors such as sex and behavior characteristics of both the perspective education leaders and their mentor principals, as well as previous relationship history were among the variables associated with relational embeddedness.

Implications for Research and Practice. This study lays theoretical groundwork and suggests directions for future research regarding relational embeddedness as a means to influence the mentoring quality needed to acquire resources for effective school leadership outcomes. This study also provides practical implications for administrators in educational leadership preparation programs regarding the multidimensional nature of relational embeddedness and the internal and external factors associated with its development.

Keywords: mentoring, social network theory, relational embeddedness, educational leadership preparation

Background

*“I think mentors are important
and I don’t think anybody makes it in the world without some form of mentorship.
Nobody makes it alone. Nobody has made it alone,
and we are all mentors to people even when we don’t know it.”
(Oprah Winfrey, 2009)*

Principals are central to the task of leading schools that promote powerful teaching and learning for all students (Davis, Darling-Hammond, LaPointe, & Meyerson, 2005). In fact, among school-based factors, leadership is second only to classroom instruction as a strategy to increase student learning (Fullan, 2002; Leithwood, Louis, Anderson & Wahlstrom, 2004; Shel, 2007). Regarding the significant challenges faced by today’s education leaders, Fullan (2009) stated: “Principals are expected to be miracle worker[s] who can do more with less, pacify rival groups, endure chronic second-guessing, tolerate low levels of support, process large volumes of paper and work double shifts” (p. 59). In addition to these demanding responsibilities, principals are expected to be change agents who are held accountable for instructional leadership to ensure that all children achieve to meet high standards (DiPaola & Tschannen-Moran, 2003). As a result of these conditions, many principals have become overloaded in a way that makes it difficult to fulfill the promise of widespread and sustained reform (DiPaola & Tschannen-Moran, 2003; Fullan, 2009).

How school leaders are prepared has implications for what happens to enhance the teaching and learning of students (Crow, 2012; Levine, 2006; Petzco, 2008). Elmore (2008) cautioned, “School leaders are being asked to assume responsibilities they are largely unequipped to assume, and the risks and consequences of failure are high for everyone, but especially high for children” (p. 43). Thus, prospective school leaders must be equipped with the

tools necessary to overcome challenges and make a difference in schools (Cunningham & Sherman, 2008; Levine, 2006).

The research on effective educational leadership preparation program design indicates one key to the development of effective school leadership may be found in high-quality mentoring relationships as part of authentic internship experiences (Catano & Stronge, 2006; Hite, Williams, & Baugh, 2005; Petzco, 2008). A key indicator of high quality may be relational embeddedness—the type and degree to which partners form ties embedded within a social relationship—which stands to affect possible resource acquisition and other outcomes (Fletcher & Ragins, 2007; Hite, 2003).

A lack of understanding exists regarding the nature of relational embeddedness in mentoring relationships, and, therefore, the resources and outcomes that may result from its development. Outcomes such as the level of trust between prospective education leaders and their mentor principals, the amount of information and other resources that are exchanged, and the degree to which future school leaders acquire the tools necessary to take on the complex roles required to successfully lead schools toward student achievement may all be affected by relational embeddedness (Hite & Matthews, 2005).

This study represents an initial examination of relational embeddedness in mentoring relationships in educational leadership preparation program internships and lays the groundwork for future research. When program administrators understand the nature of relational embeddedness, they may be better informed to design effective internship experiences that promote its development and prepare future leaders to gain the necessary resources of knowledge, skills and dispositions to positively impact their leadership and raise student achievement.

Mentoring Relationships

Traditional forms of mentoring have been characterized by descriptions of a wise mentor who shapes and guides the life of a younger, less-experienced protégé. As early as 1983, Merriam offered a definition of mentoring as a “powerful emotional interaction between an older and younger person, a relationship in which the older member is trusted, loving and experienced in the guidance of the younger” (p. 162). Current research suggests, however, that traditional definitions of mentoring can no longer meet all of the needs of individuals facing diverse and dynamic organizational contexts and careers (Ehrich, Hansford, & Tennent, 2004). In response, the definition of mentoring has been expanded to reflect a more relational approach. Fletcher and Ragins (2007) defined relational mentoring as “an interdependent and generative developmental relationship that promotes mutual growth, learning and development” (p. 374).

In mutually-enhancing mentoring relationships, both partners are responsible for their own learning and assist the learning and development of the other, thereby increasing the potential for both partners to receive benefits (Clutterbuck, 2005; Fletcher & Ragins, 2007). According to Dobrow, Chandler, Murphy and Kram (2012), when both partners in a mentoring relationship “influence each other, agree on roles and boundaries in the relationships, are aware of their impact on each other and understand one another’s intentions” (p. 215), processes may open that can generate mutual growth, learning, and development, and lead to increased satisfaction (Fletcher & Ragins, 2007).

Research also shows strong support for mentoring as a means to acquire benefits (Allen, Lentz, & Eby, 2006; Eby, 2007; Ehrich, et al., 2004). These benefits may affect career outcomes such as compensation and promotion, as well as psychosocial benefits, like friendship and support (Kram, 1983). Lave and Wenger (1991) introduced the theory of Legitimate Peripheral

Practice (LPP), where newcomers are socialized into the circle of an established community through participation with others. Similarly, Vygotsky (1978) theorized the Zone of Proximal Development (ZPD) as the difference between what a learner can do without help and what he or she can do with help from another. Clearly, participating with others in a mentoring relationship can benefit partners to acquire and exchange resources needed for learning and development.

Since learning can be increased in relationship with others, mentoring ties formed during educational leadership preparation program internships can provide valuable opportunities for prospective education leaders to develop, test, and improve their skills and prepare for an increasingly demanding environment as leaders in today's schools (Crow, 2012; Daresh, 2004; Davis, et al., 2005; Hansford & Ehrich, 2006; Lankau & Scandura, 2007). Williams, Matthews, and Baugh (2004) emphasized the importance of quality mentoring experiences by stating that prospective education leaders must “fully participate [with experienced practitioners]...for sustained periods to absorb the collective wisdom, conceptual tools and culture of the community of educational leaders” (p. 68). Thus, mentoring relationships during educational leadership preparation program internships can be a powerful tool to assist prospective leaders to acquire these needed resources.

Daresh (2004) suggested five major benefits available to prospective education leaders engaged in mentoring relationships with experienced mentor principals, as follows: (a) increased confidence about their professional competence, (b) applied educational theory learned from university coursework to actual practice, (c) improved communication skills, (d) added *tricks of the trade* from expert mentors, and (e) expanded socialization in new settings as prospective school leaders. Clearly, the mentoring relationships formed between prospective education

leaders and their mentor principals can be a key social structure through which critical resources of knowledge, skills and dispositions necessary for effective leadership preparation may flow.

The quality of mentoring relationships, like all social relationships, may be affected by a variety of factors. The literature suggests several internal factors, such as demographic or behavioral characteristics of one or both partners that can shape the quality of mentoring relationships (Clutterbuck, 2004a, 2004b; 2005; Dobrow, et al., 2012; Eby, et al., 2013; Fletcher & Ragins, 2007; Hansford & Ehrich, 2006; Noe, 1988). For example, Barak and Hasin (2010) stated that mentors with organizational skills, knowledge and expertise were linked to the quality of the mentoring relationship. Clutterbuck (2005) indicated that mentor competences such as listening, giving feedback, building trust and engaging in reciprocal behavior also enhanced the quality of the mentoring.

The literature further indicates that mentees contribute to the mentoring relationship in ways that affect quality and potential outcomes. Proactivity, initiation, and help-seeking behavior are among those characteristics cited in the literature connected with high-quality mentoring outcomes (Higgins & Kram, 2001; Wanberg, Kammeyer-Mueller, & Marchese, 2006).

External factors, regarding the context in which the mentoring relationship is embedded, may also influence relationship quality and outcomes (Crow, 2012; Davis et al., 2005; Turban & Lee, 2007). For example, the location or level of the school where the internship takes place or previous relationship history with the principal mentor may affect the development of relational embeddedness.

Social Network Theory

The mentoring relationship between a prospective education leader and their mentor principal represents a dyadic network tie that can be usefully explored using the theoretical

framework of social network theory. According to social network theory, a dyadic tie consists of two individuals, or actors, and the tie that connects them. Sets of connected dyadic ties form the structure of the social network that surrounds the actors in a mentoring relationship (Granovetter, 1973; Hite, 2003; 2005; Hite, et al., 2005; Hite & Matthews, 2005; Uzzi, 1996). Hite (2008) emphasized the potential of these dyadic ties, stating, “dyadic ties represent potential bridges, conduits, or pipes through which different types of content may flow or be exchanged” (p. 139). Thus, the dyadic tie represents the pathway through which social content and necessary human resources such as knowledge and skills can be acquired or exchanged.

However, just as social relationships may differ, dyadic ties may be expected to vary. Social network theory can explain variations in social relationships and dyadic ties in terms of relational embeddedness. Relational embeddedness describes the nature of the dyadic tie that connects two actors as part of the social network. The roots of relational embeddedness stem from Granovetter’s (1973, 1983) early, classic work describing ties as either strong or weak. Building on his concept of strong ties, Granovetter defined relational embeddedness as a function of when and how dyadic partners become enmeshed (or embedded) within the social relationship, thus shaping both the *action* and the *affect* within the tie (Granovetter, 1973; 1992; Hite, 2003; Uzzi, 1996).

The literature in social network theory describes a variety of antecedents of relational embeddedness using internal and external constructs similar to those described in the mentoring literature. Internal factors such as demographic and behavioral aspects, as well as external or contextual elements in which the dyadic tie is embedded characterize these antecedents. Both internal and external factors may impact the development and the variation of relational embeddedness and generate differential outcomes (Granovetter, 1973, 1992; Uzzi, 1996).

Some internal and external factors are fixed—that is, are inherent or unchangeable. Others, however—particularly those associated with the development of relational embeddedness—may result from the volitional choices or behavior of one or both of the actors in the tie (Granovetter, 1973; Hite, 2008; van Emmerick & Sanders, 2004). These factors may shape the action or affect between the partners (Granovetter, 1973; 1992; Hite, 2003; Uzzi, 1996). Thus, a variety of internal and external factors, as well as the choices or behavior of the actors in a dyadic tie may affect variations in relational embeddedness.

Variations of relational embeddedness may influence outcomes. For example the literature indicates outcomes such as the level of trust that is established between partners, joint problem solving, commitment and resource exchange may be among those characteristics that may be affected by relational embeddedness (Granovetter, 1973; Hite, 2003; Uzzi, 1996). The research also suggests organizational benefits, such as innovation or entrepreneurial expansion may be increased through relationally-embedded ties (Granovetter, 1973; Hite, 2005; Uzzi, 1996; van Emmerick & Sanders, 2004).

To operationalize the construct of relational embeddedness, Hite (2003) argued that dichotomies which describe relational embeddedness as simply strong or weak are insufficient to capture the inherent variation of these dyadic ties. Therefore, Hite (2003) proposed a multidimensional classification typology which identifies varying degrees and types of the multidimensional nature of relational embeddedness (see Figure 1).

<Insert Figure 1 about here>

The source of variety indicated in Hite's typology (2003) is represented by three social components. Each social component has distinct attributes which can be identified and described. *Personal relationship*—often considered to be the equivalent of the social

relationship—is just one of three social components. It is comprised of knowledge of each other’s persona, needs, and interests; affect—extent of feelings such as respect, loyalty and care; and sociality outside the mentoring context. The second social component, *dyadic interaction*, reflects the history or processes of the exchange between the partners. The attributes of *dyadic interaction* include the extent, frequency, amount, duration or intensity of the interactions; the effort expended in behalf of the other; and the ease in responsiveness and quality of the communication between partners. The third social component is *social capital* with the attributes of obligations, expectations and norms established and reciprocated; the accessibility of available resources; and brokering which is the introduction to additional networks outside the dyadic tie (see Table 1).

<Insert Table 1 about here>

Various combinations of these social components, when present at a high level, result in degrees and types of relational embeddedness (see Figure 1). Higher degrees of the social components offer more advantages over degrees that lack specific social components. For example, uni-dimensional relational embeddedness consisting of the attributes of only one social component “may be neither as stable nor as effective as more developed relationally embedded ties” (Hite, 2003 p. 35). Fully embedded ties, on the other hand, demonstrate a high level of all three social components and present a greater likelihood that the relationship can rely on a more effective, multiplex base of benefits and resources. Types of relational embeddedness are similarly classified as a result of the combination of high levels of one or more of the social components and are identified as follows: (a) *personal*, (b) *competency*, (c) *hollow*, (d) *isolated*, (e) *functional*, (f) *latent* (g) *full embeddedness* and (h) *not-embedded* (see Figure 1 and Table 1).

To measure relational embeddedness in dyadic ties, Hite, Wakkee, Hite, Sudweeks and Walker (2011) developed the Typology of Relational Embeddedness Network Data Survey (TRENDS). Based on participants' responses, this validated network survey instrument measures the extent of the three social components and classifies the dyadic tie according to degree and type of relational embeddedness. Hite's (2003) Typology of Relational Embeddedness, with the TRENDS instrument (Hite et al., 2011), offer a useful perspective from which to examine the mentoring relationships between prospective education leaders and their mentor principals in educational leadership preparation program internships.

Research Problem

Prospective education leaders face challenges and demanding environments often lacking resources of knowledge, skills and dispositions needed to make a difference in schools. The potential to find these resources may be found in mentoring relationships formed during educational leadership preparation program internships. While mentoring is a key component of many programs, a lack of understanding exists regarding variations in the nature of these mentoring relationships—specifically in terms of relational embeddedness. It is important to understand these variations because relational embeddedness may make a difference in the quality of the relationship and affect potential outcomes to enable school leaders to persist and succeed as school leaders.

To address the need to understand the nature of relational embeddedness this study examines the mentoring relationships between prospective K-12 education leaders and their mentor principals. Internal as well as external factors which may affect the development of relational embeddedness are examined and discussed. Using the Typology of Relational Embeddedness (Hite 2003), and the TRENDS survey instrument (Hite et al. 2011), this research

demonstrates a way to measure and identify degrees and types of relational embeddedness that may affect the quality of the mentoring relationship and the potential outcomes associated with effective education leader preparation (see Figure 2).

<Insert Figure 2 about here>

This study explores the following research questions:

1. What is the nature of relational embeddedness in the mentoring relationships between prospective K-12 education leaders and their mentor principals in educational leadership preparation program internships?
2. How are internal factors of the prospective K-12 education leaders and their mentor principals associated with the relational embeddedness in the mentoring ties?
3. How are external factors in the context in which the mentoring relationship is embedded associated with the relational embeddedness in the mentoring ties?

Administrators of education leadership preparation programs who understand the potential variation in the nature of relational embeddedness can be informed to design internship experiences that lead to high-quality mentoring relationships necessary for effective school leadership outcomes. Browne-Ferrigno and Muth (2004) stated that high-quality mentoring relationships “improve, expand and deepen leadership capacity in schools” (p. 489). While these outcomes are outside the immediate scope of this research, understanding the nature of relational embeddedness and the antecedents which influence its development may lay the foundation for future research of effective school leadership outcomes.

Methods

This study utilizes theoretical frameworks in mentoring and social network theory to examine the nature of relational embeddedness in the mentoring relationships between

prospective K-12 education leaders and their mentor principals. Associations between internal factors of the partners in a mentoring relationship, external factors in the context in which the mentoring relationship is embedded and relational embeddedness are also explored.

The specific case under examination is an educational leadership preparation program at a western university. The program has prepared education leaders for nearly three decades and generally accepts up to 30 candidates each year. Candidates complete the program within either a full- or part-time internship structure. Key components of both internship structures are mentoring experiences in actual K-12 school settings. These internships provide opportunities for prospective leaders to complete the hours of administrative internship necessary for state licensure. Educational leadership preparation program administrators, in partnership with neighboring school districts, broker or match the mentoring partnerships between prospective education leaders and established principals as their mentors. After the successful completion of the program, candidates receive a Masters of Education degree (M.Ed.). In the study period, 91% of the candidates pursued and received administrative licenses from the state.

Sample

The population for this study includes all licensed schoolteachers in educational leadership preparation programs. The purposive sample consisted of prospective K-12 education leaders enrolled in the western university's educational leadership preparation program during the years 2010 to 2014 (n=118). A total of 47 (40%) of the sample completed the survey. The gender composition of this sample was 58% female and 42% male. All participants ranged in age from 25-55 years old and had a minimum of three years teaching experience.

Of the three internship structures offered, 43% of the participants completed a full-time internship. This structure consists of extensive internship experiences with mentor principals at

three school levels (i.e., elementary, junior and senior high school). The other 57% of the participants participated in one of two part-time internship structures. The first type provided a resident school internship with a principal at the same school in which the prospective education leader was currently teaching. The second type offered at least two lab school internships with unfamiliar mentor principals at different schools and levels from where the participant was teaching. Since the majority of prospective education leaders had three separate internship experiences with three different mentors, those who participated in the survey reported on aspects of their mentoring relationships with each of their three mentor principals. This response pattern can create *actor non-independence* in the data which represents a potential limitation of this study.

Of the 122 mentor principals identified by the participants in this sample, 38% were female and 62% were male. Most of the mentor principals (69%) were perceived by the participants to be older compared to themselves. The majority of the mentor principals (85%) had just one mentoring relationship during the study time frame, while 15% had multiple mentoring relationships in the same period. Given that a mentor principal could be identified by multiple prospective educational leaders, the data may also reflect issues of *alter non-independence*. To address this potential limitation one of the mentor principal's ties was selected randomly for inclusion in the study and the remaining ties were dropped from the data. The resulting sample of 47 prospective education leaders and the 122 unique mentor principals compose the 128 dyadic mentoring ties that represent the focus for this study. Within these 128 mentoring ties, all four possible gender combinations were represented. Thirty-eight percent of the prospective education leaders were paired with a female principal mentor compared with

62% paired with a male mentor. Table 2 shows the distribution of these mentoring relationship gender compositions.

<Insert Table 2 about here>

Data Collection

Prospective education leaders as the participants completed an online Qualtrics survey designed to respond to the research questions. Most of the survey items, except the demographics, allowed participants to indicate the extent to which survey statements described their mentoring experiences and utilized a 4-point Likert scale with options as follows: (a) not descriptive, (b) somewhat descriptive, (c) moderately descriptive, and (d) very descriptive.

To address the first research question, the survey included 16 items from the Typology of Relational Embeddedness Network Data Survey (TRENDS) instrument (Hite et. al 2011). These survey items were then analyzed to determine the degree and type of relational embeddedness in the mentoring relationship from the prospective education leaders' point of view (see Appendix A). Survey items also addressed the second research question regarding internal factors of the partners in the mentoring relationship. Participant sex was used as an internal factor for prospective education leaders along with three additional behavioral characteristics (i.e., *takes responsibility, contributes resources and asks for help*). Sex and eight typical behaviors were used to measure internal factors for mentor principals (i.e., *listens, makes time, follows through, offers honest feedback, offers timely feedback, helps identify goals, helps achieve goals, assigns meaningful tasks, and provides support*). All of these internal factors were cited in the literature as characteristics of mentoring partners related to high quality and positive mentoring outcomes (Clutterbuck 2004a, 2004b; 2005; Dobrow, et al., 2012; Eby, et al., 2013; Fletcher & Ragins, 2007; Hansford & Ehrich, 2006). The third research question examined two external factors

present within the environment in which the mentoring relationship was embedded (i.e., *internship structure*, and *relationship history*). The last section of the survey contained items regarding potential outcomes of mentoring relationships (i.e., *learned* and *gained confidence*).

Data Analysis

After the Qualtrics surveys were completed by the participants, the data was exported into Excel. The names of the prospective education leaders and their mentor principals were removed to protect their identity, and each prospective education leader and mentor principal, as part of a dyadic mentoring tie was assigned an identifying number. The resulting 128 mentoring ties became the focus for data analysis. Excel was used to generate descriptive statistics (means and standard deviations). Values for each of the three social components of relational embeddedness for the 128 unique dyadic ties were then determined. A tie was deemed to have a high level of a social component if its value was greater than one standard deviation above the average value among the respondents for that social component (see Table 3).

<Insert Table 3 about here>

To statistically analyze the mentoring ties, the internal and external factors with low data counts of *not* descriptive and *somewhat* descriptive were re-coded into a single category for low descriptiveness. The categories of *moderately* descriptive and *very* descriptive, which contained adequate cell counts, were left intact. Thus, a classification of *low*, *medium* and *high* characterized participants' responses to survey items.

These internal and external factors were the independent variables. The three social components identified in Hite's (2003) typology as well as relational embeddedness degrees and types were the dependent variables. Given that all of the variables were nominal/categorical, the

Chi-Square Test for Independence was used to test for statistical associations, with the standard for statistical significance as $p\text{-value} \leq .05$.

Findings

The findings address the nature of relational embeddedness within the mentoring ties between prospective educational leaders and their mentor principals in an educational leadership preparation program. Findings also indicate the association between internal and external factors and relational embeddedness social components, degrees and types.

The Nature of Relational Embeddedness in Mentoring Ties

The nature of the relational embeddedness and the resulting identification of degrees and types are grounded in high extents of the three social components (Hite, 2003). Of the 128 mentoring ties in this sample, 40 (30%) were relationally embedded which is consistent with other validated research conducted with the TRENDS survey instrument (Hite et. al. 2011). Given the strategy of determining the threshold using the cutoff as equal to or less than one standard deviation, 70% of the mentoring ties were *not* relationally embedded (see Table 3).

Table 4 shows the distributions of the three social components and supports the identification of relational embeddedness degree and type within these mentoring ties. All three levels of degrees and all seven types of relational embeddedness, plus non-embedded, were represented. Clearly, utilizing Hite's typology displays a wider range of variation in relational embeddedness in this sample than would have been accounted for if based exclusively on the dichotomy of strong or weak ties originally proposed by Granovetter (1973, 1992).

<Insert Table 4 about here>

Internal Factors of Mentoring Ties and the Nature of Relational Embeddedness

The nature of the relational embeddedness in this sample of mentoring ties showed patterns across all three social components as well as degrees and types (see Tables 5 and 6). The sex of prospective education leaders, for example, was associated with the social component of *personal relationship*, with females demonstrating more relationally embedded ties (see Table 5). The sex of prospective education leaders was also associated with the degree and type of relational embeddedness. Again, female prospective education leaders had more relationally embedded mentoring ties at each degree and type—with the exception of ties in the *functional* type which included more male prospective education leaders (75%) than female (25%) (see Table 6).

<Insert Table 5 about here>

<Insert Table 6 about here>

Mentor principal sex was not significantly associated with relational embeddedness social components, degree or type. This finding indicates that prospective educational leaders were just as likely to be in relationally embedded mentoring ties with mentor principals of either sex. However, findings did suggest trend associations with the distribution of relational embeddedness type, given that more female mentor principals (63%) have relationally embedded ties with *full* relational embedded ties (see Table 6). Male mentor principals, on the other hand, were in more relationally embedded ties with *hollow* embeddedness with its high extent of *social capital*, (i.e., obligations, resource acquisition and networking).

Many of the internal factors—behaviors typical of prospective education leaders and mentor principals in mentoring relationships—were associated with relational embeddedness (see Tables 5 and 6). For example, the internal factors for prospective education leaders of

contributes resources and *asks for help* were both associated with the three social components, while the internal factor of *takes responsibility* was only associated with the social component of *dyadic interaction*.

The internal factors for mentor principals were also associated with one or more of the social components of relational embeddedness. Most notably, the factors of *listens*, *makes time*, *offers timely feedback*, *helps identify* and *achieve goals* and *provides support* were associated with the social component of *personal relationship*. Strong associations were also found between the internal factors *makes time*, *helps identify goals* and *provides support* and the social component of *dyadic interaction*. The internal factors of *helps identify goals* was associated with the component of *social capital*. In addition, the internal factors of *offers timely feedback* and *assigns meaningful tasks* were associated with degree of relational embeddedness, demonstrating richer levels of relational embeddedness (see Tables 5 and 6).

External Factors of Mentoring Ties and the Nature of Relational Embeddedness

The external factor of the design of the *internship structure* was not significantly associated with any social component, degree or type of relational embeddedness (see Tables 7 and 8). However, the findings do indicate a trend association between the full-time internship structure and the social component of *social capital*. This finding suggests that full-time internships with greater duration may offer more opportunities to develop the attributes of the *social capital* component such as obligations, resource exchange and networking/brokering. The full-time internship structure also demonstrated a trend association with a greater degree of relational embeddedness, but not with type.

<Insert Table 7 about here>

<Insert Table 8 about here>

The external factor of previous *relationship history* (e.g., when the mentor principal is known by the prospective education leader prior to the actual internship experience) was significantly related to high extents of each of the three social components of relational embeddedness (see Tables 7 and 8). Findings also indicated a trend association between *relationship history* and degree of relational embeddedness with more of these ties demonstrating either a uni-dimensional and full degree of relational embeddedness. Previous *relationship history* also indicated a trend association with type of relational embeddedness (see Table 8).

The two external factors themselves, *internship structure* and *relationship history*, also had a significant relationship (see Table 9). Findings suggested that the full-time internship was associated with prospective education leaders knowing the mentor principal by reputation alone. Prospective education leaders who knew the mentor principal through work (i.e., internship at the same school where they were currently teaching) or socializing outside the work setting were associated with the part-time internship structure.

<Insert Table 9 about here>

Summary of the Nature of Relational Embeddedness in Mentoring Ties

Relational embeddedness in the mentoring ties between prospective education leaders and their mentor principals indicated clear variation. The nature of the relational embeddedness demonstrated associations between the internal and external factors and relational embeddedness social components, degrees, and types (see Table 10). While outcomes of relational embeddedness were not specifically addressed in this study as a research question, the data did support a significant association between two mentoring outcomes cited in the literature—*learned tricks of the trade* and *gained confidence* as an effective school leader—and relational embeddedness social components (see Table 11).

<Insert Table 10 about here>

<Insert Table 11 about here>

Discussion

The discussion section provides both theoretical and practical implications of the findings in the nature of relational embeddedness and the internal and external factors of the mentoring ties between prospective education leaders and their mentor principals in this sample.

Administrators of educational leadership preparation programs who understand the variation of relational embeddedness within mentoring ties and the potential impact of internal and external factors on its development may design internship experiences that promote relational embeddedness and potentially increase outcomes related to effective educational leadership preparation.

Theoretical Implications

The main theoretical implication of this research is that relational embeddedness is supported as a multidimensional construct in mentoring ties between prospective K-12 education leaders and their mentor principals in this sample. Mentoring ties varied in the extent of relational embeddedness social components as well as degrees and types. The findings support the argument of greater diversity among mentoring ties than indicated by the traditional strong and weak tie dichotomy (Granovetter, 1973, 1983, 1992; Hite, 2003; Uzzi, 1996). These findings also lay theoretical groundwork for understanding potential advantages of relational embeddedness outcomes (Granovetter, 1992; Hite, 2003). These outcomes include mentoring tie evolution toward full relational embeddedness which may offer the advantages of all three social components and provide a wider range of potential resources within the relationship (Hite, 2003).

The variation and multidimensional nature of relational embeddedness is related to a variety of internal and external factors. The findings suggest the sex of the mentoring partners may be related to the development of relational embeddedness within that tie. For example, female prospective education leaders had higher extents of the social component *personal relationship* and higher levels of every degree of relational embeddedness—including 100% of the fully dimensional degrees (see Table 7). The relationship between sex and the social component of *personal relationship* support the literature which states that female mentors may offer more psychosocial benefits (Noe, 1988).

Male prospective education leaders, on the other hand, had more relationally embedded mentoring ties of the *functional* type. *Functional* is a bi-dimensional type of relational embeddedness consisting of high levels of the social components *dyadic interaction* and *social capital* (see Table 1). Furthermore, 75% of the mentoring ties in the *functional* type had male mentors as did 100% of the ties in the uni-dimensional type of *hollow*. The benefits associated with these types correspond with the attributes of *social capital* and support Turban and Lee's (2007) claim that male mentors paired with either a male or female mentee offered organizational exposure and improved career benefits. Future research is needed to clarify the role of the sex homophily and heterophily in mentoring ties and how it may affect relational embeddedness social components, degrees and types (McPherson, Smith-Lovin, & Cook, 2001).

The findings of this study further indicate a consistent association between internal factors of both prospective education leaders and mentor principals and the relational embeddedness in the mentoring ties. For example, mentoring ties where prospective education leaders indicated they *contributed resources* and *asked for help* to a high degree were associated with all of the social components of relational embeddedness. *Contributes resources* was also

associated with the degree of relational embeddedness (see Table 8). This finding supports the literature which claims that mentees who contributed resources such as ideas and interpersonal skills actually improved the quality of the relationship (Allen et al., 2006; Fletcher & Ragins, 2007; Granovetter, 1992; Hite, 2005; Orland-Barak and Hasin, 2010; Turban & Lee, 2007; Wanberg, Kammeyer-Mueller & Marchese, 2006; Uzzi, 1996). Thus, educational leaders who demonstrate these characteristics may be able to increase the quality of their mentoring relationships and the potential that the relational embeddedness in the mentoring ties may evolve toward *full* embeddedness (Hite, 2005).

Internal factors of mentor principals were also associated with the relational embeddedness in this sample of mentoring ties. The findings provide evidence to support Clutterbuck (2004a, 2004b, 2005) who stated that certain personality characteristics enhance the quality of the mentoring relationship. For example, mentor principals who *listen* and *provide support* may promote the development of the social component of *personal relationship*. Similarly, when mentor principals *make time, follow through* with commitments and *offer honest and timely feedback* the development of the social component *dyadic interaction* may be enhanced. Lastly, when mentor principals choose to help *identify* and *achieve goals*, and *assign meaningful tasks* may enhance the development of the *social capital* component (see Table 10).

Of all the internal factors for mentor principals, only two indicated a deeper relational embeddedness with degree. These two characteristics were *offers timely feedback* and *assigns meaningful tasks*. These findings suggest that when mentor principals engage in these behaviors they may influence the development of relational embeddedness and increase potential advantages and resource acquisition (Hite, 2003).

External factors may also affect the development of relational embeddedness. Of the two external factors examined in this study, previous *relationship history* was associated with relational embeddedness in these mentoring ties. With a previous *relationship history*, the mentoring relationship may have the advantages of the social component *personal relationship* prior to the actual internship experience. Similarly, the extent, effort and ease of the *dyadic interaction* component may have been initiated, and the *social capital* component with its obligations, resource accessibility and networking potential may have been more fully established with the mentoring partner.

Practical Implications

The variations found among the mentoring ties in this sample suggest practical implications for administrators of educational leadership preparation programs. As administrators recognize the potential for variations of relational embeddedness and the internal and external factors associated with its development, they may be able to enhance the potential value of these critical relationships. The following section offers practical implications for administrators.

Given that sex was associated with relational embeddedness development, program administrators who intentionally consider gender compositions when matching mentoring partners may increase the potential advantages of these mentoring ties. For example, mentoring ties with two female partners, both a female prospective education leaders and female mentor principal, had higher extents of *personal relationship*. Ties with two male partners, a male prospective education leader and a male mentor principal, had higher extents of *dyadic interaction* and *social capital*. When administrators match mentoring partners of different sexes (i.e., female prospective education leader with a male mentor or a male prospective education

leader with a female mentor), the potential advantages of a broader range of social components may become available. Mentoring partnerships may also be arranged with homophily, along a broader range of characteristics such as personality or specialty areas. Future research is needed to clarify the role of homophily or heterophily in mentoring relationships as well as the potential benefits (outcomes) that may be available in differing compositions (McPherson et al., 2001).

The internal factors of prospective educational leaders and mentor principals that were associated with relational embeddedness may be increased through awareness and training. For example, specific training of characteristics such as *taking responsibility* for their own learning, *contributing resources* and *asking for help* may enable prospective education leaders to increase relational embeddedness development in their mentoring ties. Training mentor principals may also be beneficial. For example, mentor principals may be encouraged through training and awareness to *offer timely feedback* and *assign meaningful tasks* and thereby increase the component of *personal relationship*. Similarly, when mentor principals demonstrate the effort needed for *dyadic interaction* processes and promote the obligations and norms of *social capital* they may increase the possibility of acquiring critical resources needed by effective school leaders.

While internships are among the most highly valued experiences in education leadership preparation programs, they are still one of the most challenging features to deliver effectively (Orr, 2011). Although the mentoring literature suggests that mentoring quality may be related to the duration, location, and level in which the mentoring relationship takes place as well as the frequency of contact between mentors and mentees (Allen et. al, 2006; Alsbury & Hackmann, 2006; Browne-Ferrigno & Muth, 2004; Crow, 2012; Davis et al., 2005; Turban & Lee, 2007), this study found no association between the design of the *internship structure* (full- or part-time)

and relational embeddedness. However, the *internship structure* was related to the *relationship history* established between prospective education leaders and mentor principals. When prospective education leaders were aware of their mentor principals prior to the internship experience, either through a work or social setting or simply by reputation alone, the relational embeddedness in the mentoring tie was increased. This finding has practical implications for administrators of educational leadership preparation programs. While some states discourage mentoring relationships between prospective education leaders and principals at the schools in which they currently working, this study indicates this practice may actually provide a valuable opportunity to utilize the previous relationship history to increase the development of relational embeddedness in the mentoring tie.

Administrators of educational leadership preparation programs who understand the potential advantages associated with *relationship history* may easily incorporate opportunities for prospective educational leaders to become familiar with mentor principals prior to the internship. For example, pre-internship workshops may offer specific training in relational embeddedness development and provide opportunities for prospective education leaders to meet and interact meaningfully with their mentor principals. These pre-internship interactions may then initiate the development the social component *personal relationship*, allow time to practice the processes and skills of *dyadic interaction* and begin to build the networking capacity of *social capital*. By simply providing opportunities for mentoring partners to meet, interact and establish a *relationship history* the possibility of relational embeddedness development is increased.

Conclusion

The work of effective school leadership is challenging, and the skills needed to be successful cannot be acquired through on-the-job training alone (Godshalk & Sosik, 2007).

Mentoring relationships during internships appear to be a key social structure through which the resources of knowledge, skills and dispositions may flow. Administrators of educational leadership preparation programs must take the lead to prepare prospective education leaders (Catano & Stronge, 2006; Cunningham & Sherman, 2008; DiPaola & Tschannen-Moran, 2003; Levine, 2006) by encouraging the development of relational embeddedness. The development of relational embeddedness can be one way for administrators to provide a bridge or conduit through which the critical resources necessary for effective school leadership may be acquired and refined (Hite, 2003).

Given that relational embeddedness can increase the flow of resource exchange and other potential benefits (Hite & Matthews, 2005), additional research is needed to identify the antecedents and outcomes of relational embeddedness in mentoring ties. When relational embeddedness is measured and identified, the advantages associated with its development including resources of trust, knowledge and skills may become more readily available to prospective education leaders and mentor principals.

The schools in which the mentoring relationships are embedded may also benefit from future research on relational embeddedness and the factors that affect its development. When organizational cultures emphasize learning through mentoring relationships, innovation increases while job turnover decreases (Dawley, Andrews, & Bucklew, 2010). Similarly, organizations that show strong support for mentoring as vehicles for personal learning and development, increase successful performance outcomes in challenging environments (Chandler & Kram, 2005).

The development of relationally embedded mentoring ties stands to be a valuable and effective strategy for preparing prospective education leaders, benefiting mentor principals and

strengthening the schools in which they are embedded. This study applies the measurement of relational embeddedness to the field of educational leadership preparation and identifies variations in the distribution of relational embeddedness social components, degrees and types. Findings can inform educational leadership preparation program administrators in their understanding of the multidimensional nature of relational embeddedness and the internal and external factors that may improve its development and increase potential educational outcomes. Thus, prospective educational leaders can be better prepared to overcome challenges and make a difference in schools.

References

- Allen, T. D., Lentz, E., & Eby, L. T. (2006). Mentorship behaviors and mentorship quality associated with formal mentoring programs: Closing the gap between research and practice. *Journal of Applied Psychology, 91*(3), 567-578.
- Alsbury, T. L., & Hackmann, D. G. (2006). Learning from experience: Initial findings of a mentoring/induction program for novice principals and superintendents. *Planning and Changing, 37*(3/4), 169-189.
- Browne-Ferrigno, T. & Muth, R. (2004). Leadership mentoring in clinical practice: Role socialization, professional development, and capacity building. *Educational Administration Quarterly, 40*(46), 8-494.
- Catano, N., & Stronge, J. H. (2006). What are principals expected to do? Congruence between principal evaluation and performance standard. *NASSP Bulletin, 90*(3), 221-237.
- Chandler, D. E., & Kram, K. E. (2005). Applying an adult development perspective to developmental networks. *Career Development International, 10*(6/7), 548-566.
- Clutterbuck, D. (2004a). Mentor competences: A field perspective. In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 42-56). Burlington, VT: Gower Publishing Limited.
- Clutterbuck, D. (2004b). What about mentee competences? In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 72-82). Burlington, VT: Gower Publishing Limited.
- Clutterbuck, D. (2005). Establishing and maintaining mentoring relationships: An overview of mentor and mentee competencies. *Journal of Human Resource Management, 3*(3), 2-9.

- Crow, G. M. (2012). School leader preparation: A short review of the knowledge base. Retrieved 7.13.2013. DOI: <http://dera.ioe.ac.uk/id/eprint/5127>
- Cunningham, W. G., & Sherman, W. H. (2008). Effective internships: Building bridges between theory and practice. *The Educational Forum*, 72(4), 308-318.
- Daresh, J. C. (2004). Mentoring school leaders: Professional promise or predictable problems. *Educational Administration Quarterly*, 40(4), 495-517.
- Davis, S., Darling-Hammond, L. LaPoint & Meyerson, D. (2005). *School leadership study: Developing successful principals. The Wallace Foundation*. Stanford Educational Leadership Institute. DOI: <https://edpolicy.stanford.edu/publications/products/949>
- Dawley, D. D., Andrews, M. C., & Bucklew, N. S. (2010). Enhancing the ties that bind: Mentoring as a moderator. *Career Development International*, 15(3), 259-278.
- DiPaola, M., & Tschannen-Moran, M. (2003). The principalship at a crossroads: A study of the conditions and concerns of principals. *National Association of Secondary School Principals. NASSP Bulletin*, 87(634), 43-65.
- Dobrow, S. R., Chandler, D. E., Murphy, W. M., & Kram, K. E. (2012). A review of developmental networks: Incorporating a mutuality perspective. *Journal of Management*, 38(1), 210-242.
- Eby, L. T. (2007). Understanding relational problems in mentoring: A review and proposed investment model. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Eby, L. T., Allen, T. D., Hoffman, B. J., Baranik, L. E., Sauer, J. B., Baldwin, S., ... & Evans, S. C. (2013). An interdisciplinary meta-analysis of the potential antecedents, correlates, and consequences of protégé perceptions of mentoring. *Psychological Bulletin*, 139(2), 441-446.

- Ehrich, L. C., Hansford, B., & Tennent, L. (2004). Formal mentoring programs in education and other professions: A review of the literature. *Educational Administration Quarterly*, 40(4), 518-540.
- Elmore, R. F. (2008). *School reform from the inside out: Policy, practice, and performance* (Fifth Printing ed.). Cambridge, MA: Harvard Education Press.
- Fletcher, J. K., & Ragins, B. R. (2007). Stone center relational cultural theory: A window on relational mentoring. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Fullan, M. (2002). The change leader. *Educational Leadership*, 59(8) 16-31.
- Fullan, M. (2009). The principal and change. In M. Fullan (Ed.), *The challenge of change: Start school improvement now!* 2nd ed. (pp. 55-70). Thousand Oaks, CA: Corwin.
- Godshalk, V. M., & Sosik, J. J. (2007). Mentoring and leadership: Standing at the crossroads of theory, research, and practice. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Granovetter, M. S. (1973). The strength of weak ties. *Journal of Sociology*, 78(6), 1360-1380.
- Granovetter, M. S. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, 1, 201-233. DOI: <http://www.soc.ucsb.edu/faculty/friedkin/Syllabi/Soc148/Granovetter%201983.pdf>
- Granovetter, M. S. (1992). Problems of explanation in economic sociology. In N. Nohria, & R. Eccles (Eds.), *Networks and organizations* (pp. 25-56). Boston, MA: Oxford University Press.

- Hansford, B., & Ehrich, L. C. (2006). The principalship: How significant is mentoring? *Journal of Educational Administration*, 44(1), 36-52.
- Higgins, M. C., & Kram, K. E. (2001). Reconceptualizing mentoring at work: A developmental network perspective. *Academy of Management Review*, 26(2), 264-288.
- Hite, J. M. (2003). Patterns of multi-dimensionality among embedded network ties: A typology of relational embeddedness in emerging entrepreneurial firms. *Strategic Organization*, 1(1), 9-49.
- Hite, J. M. (2005). Evolutionary processes and paths of relationally embedded network ties in emerging entrepreneurial firms. *Entrepreneurship Theory and Practice*, 29(1), 113-144.
- Hite, J. M. (2008). The role of dyadic multi-dimensionality in the evolution of strategic network ties. In J. A. C. Baum, & T. J. Rowley (eds.), *Network strategy: Advances in strategic management*, (25), (pp. 133-170). Emerald Group Publishing Limited.
- Hite, J. M., & Matthews, L. J. (2005). Assessing impact of leadership preparation programs: An analysis of the effect of student cohorts and administrative internships on the development of candidates' administrative networks. *NCPEA Education Leadership Review*, 6(1), 15-26.
- Hite, J. M., Wakkee, I., Hite, S. J., Sudweeks, R., & Walker, T. D. (2011). Validating TRENDS – the typology of relational embeddedness network data survey. Presentation *31st Sunbelt International Social Network Conference*. St. Petersburg, FL.
- Hite, J. M., Williams, E. J., & Baugh, S. B. (2005). Multiple networks of public school administrators: An analysis of network content and structure. *International Journal of Leadership in Education: Theory and Practice*, 8(2), 91-122.
- Kram, K. E. (1983). Phases of the mentor relationship. *Academy of Management Journal*, 26(4), 608-625. DOI: 10.2307/255910.

- Lankau, M. J., & Scandura, T. A. (2007). Mentoring as a forum for personal learning in organizations. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, MA: Cambridge University Press.
- Leithwood, K., Louis, K.S. Anderson, S. & Wahlstrom, K. (2004). *Learning from leadership project*, The Wallace Foundation, The University of Minnesota; The University of Toronto. DOI: <http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/documents/how-leadership-influences-student-learning.pdf>
- Levine, A. (2006). Educating school leaders. *The education schools project*. Retrieved February 21, 2012, DOI: http://www.edschools.org/pdf/Embargoed_Report_050315.pdf
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27: 415-444.
- Merriam, S. (1983). Mentors and protégés: A critical review of the literature. *Adult Education Quarterly*, 33(3), 161-173.
- Noe, R. A. (1988). An investigation of the determinants of successful assigned mentoring relationships. *Personnel Psychology*, 41(3), 457-479.
- Orland-Barak, L., & Hasin, R. (2010). Exemplary mentors' perspectives towards mentoring across mentoring contexts: Lessons from collective case studies. *Teaching and Teacher Education*, 26, 427-437.
- Orr, M. T. (2011). Pipeline to preparation to advancement: graduates' experiences in, through and beyond leadership preparation. *Educational Administration Quarterly*, 47(1), 114-172.

- Petzco, V. (2008). The perceptions of new principals regarding the knowledge and skills important to their initial success. *NASSP Bulletin*, 92(3), 224-250.
- Shel, T. A. (2007). *The ethics of caring: Bridging pedagogy and utopia*. Rotterdam/Taipei: Sense Publishers.
- Turban, D. B., & Lee, F. K. (2007). The role of personality in mentoring relationships. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*, 61(4), 674-698.
- van Emmerick, H., & Sanders, K. (2004). Social embeddedness and job performance of tenured and non-tenured professionals. *Human Resource Management Journal*, 14(1), 40-54.
- Vygotsky, L. S. (1978). Interaction between learning and development. In Cole M. (Ed.), *Mind in society: The development of higher psychological processes* (pp. 79-91). Cambridge, MA: Harvard University Press.
- Wanberg, C. R., Kammeyer-Mueller, J., & Marchese, M. (2006). Mentor and protégé predictors and outcomes of mentoring in a formal mentoring program. *Journal of Vocational Behavior*, 69(3), 410-423.
- Williams, E. J., Matthews, J., & Baugh, S. (2004). Developing a mentoring internship model for school leadership: Using legitimate peripheral participation. *Mentoring and Tutoring*, 12(1) 53-70.

Table 1

Relational Embeddedness Type, Social Component(s), Attributes and Degree

Number Key	Type	Social Component(s)	Attributes & Description	Degree
1	Personal	Personal Relationship	Knowledge, Affect, Sociality	Uni-dimensional Embeddedness
2	Competency	Dyadic Interaction	Extent, Effort, Ease	Uni-dimensional Embeddedness
3	Hollow	Social Capital	Obligations, Resource Accessibility, Brokering	Uni-dimensional Embeddedness
4	Isolated	Personal Relationship Dyadic Interaction	<i>High</i> Knowledge, Affect, Sociality; <i>High</i> Extent, Effort, Ease <i>Low</i> Obligations, Resource Accessibility Brokering	Bi-dimensional Embeddedness
5	Functional	Dyadic Interaction Social Capital	<i>High</i> Extent, Effort, Ease; <i>High</i> Obligations, Resource Accessibility, Brokering <i>Low</i> Knowledge, Affect, Sociality	Bi-dimensional Embeddedness
6	Latent	Social Capital Personal Relationship	<i>High</i> Obligations, Resource Accessibility, Brokering <i>High</i> Knowledge, Affect, Sociality <i>Low</i> Extent, Effort, Ease	Bi-dimensional Embeddedness
7	Full	Personal Relationship Dyadic Interaction Social Capital	<i>High</i> Knowledge, Affect, Sociality <i>High</i> Extent, Effort, Ease <i>High</i> Obligations, Resource Accessibility, Brokering	Fully Embedded
8	Not-Embedded	None	No high-degree of any of the Social Components	No Embeddedness

(adapted from Hite, 2003)

Table 2

Distribution of Mentoring Ties Based on Sex Homophily (n=128 ties)

Sex of Prospective Education Leaders	Sex of Mentor Principals		
	<i>Female</i>	<i>Male</i>	
<i>Female</i>	29 (59%)	45 (57%)	74 (58%)
<i>Male</i>	20 (41%)	34 (43%)	54 (42%)
<i>Total</i>	49 (38%)	79 (62%)	128 (100%)

Table 3

Range, Mean, Standard Deviation and Threshold Cutoff for Social Components of Relational Embeddedness

	Personal Relationship	Dyadic Interaction	Social Capital
Range	4-16	8-32	4-16
Mean	10.28	22.48	11.90
Standard Deviation	3.77	6.68	3.47
Threshold Cutoff for High Level	14.05	29.16	15.37

Table 4

Distribution of Mentoring Relationship Ties by Relational Embeddedness Degree, Type and Social Components (n=128 ties)

Non-Relationally Embedded Ties				
	88 (70%)			
Relationally Embedded Ties				
	40 (30%)			
Degree of Relational Embeddedness	Distribution of Degree	Type	Distribution of Type	Social Components
Uni-Dimensional	17 (13%)	Personal	5 (4%)	Personal Relationship
		Competency	5 (4%)	Dyadic Interaction
		Hollow	7 (5%)	Social Capital
Bi-Dimensional	15 (11%)	Isolated	7 (5%)	Personal Relationship Dyadic Interaction
		Functional	4 (3%)	Dyadic Interaction Social Capital
		Latent	4 (3%)	Personal Relationship Social Capital
Full-Dimensional	8 (6%)	Full	8 (6%)	Personal Relationship Dyadic Interaction Social Capital
Totals	128 (100%)		128 (100%)	

Table 5

Internal Factors of Mentoring Relationship Ties and High Extent of Social Components of Relational Embeddedness (n=128 ties)

Mentoring Partner & Internal Factors		High Extent of Social Components								
		Personal Relationship (n= 24 ties 19% of all ties)			Dyadic Relationship (n= 24 ties 19% of all ties)			Social Capital (n=23 ties 18% of all ties)		
		Yes	No	Sig	Yes	No	Sig	Yes	No	Sig
Prospective Education Leaders										
Demographic (sex)	<i>Female</i>	83%	52%	**	71%	55%		65%	56%	
	<i>Male</i>	17%	48%		29%	45%		35%	44%	
Takes Responsibility	<i>Not Descriptive</i>	0%	9%		0%	9%	*	0%	9%	
	<i>Moderately Descriptive</i>	17%	22%		8%	24%		17%	22%	
	<i>Very Descriptive</i>	83%	69%		92%	67%		83%	70%	
Contributes Resources	<i>Not Descriptive</i>	0%	21%	**	0%	21%	***	0%	21%	**
	<i>Moderately Descriptive</i>	12%	32%		4%	34%		12%	32%	
	<i>Very Descriptive</i>	88%	47%		96%	45%		88%	47%	
Asks for Help	<i>Not Descriptive</i>	0%	19%	***	0%	19%	***	0%	19%	**
	<i>Moderately Descriptive</i>	0%	31%		4%	30%		5%	31%	
	<i>Very Descriptive</i>	100%	50%		96%	51%		95%	50%	
Mentor Principals										
Demographic (sex)	<i>Female</i>	37%	38%	†	37%	38%	†	30%	40%	
	<i>Male</i>	63%	62%		63%	62%		70%	60%	
Listens	<i>Not Descriptive</i>	0%	27%	***	0%	27%	**	4%	26%	**
	<i>Moderately Descriptive</i>	0%	21%		8%	19%		9%	19%	
	<i>Very Descriptive</i>	100%	52%		92%	54%		87%	55%	
Makes Time	<i>Not Descriptive</i>	0%	26%	***	0%	26%	***	0%	26%	**
	<i>Moderately Descriptive</i>	0%	23%		0%	23%		9%	21%	
	<i>Very Descriptive</i>	100%	51%		100%	51%		91%	53%	
Follows Through	<i>Not Descriptive</i>	0%	15%	**	0%	15%	**	0%	15%	**
	<i>Moderately Descriptive</i>	0%	32%		4%	30%		9%	30%	
	<i>Very Descriptive</i>	100%	53%		96%	55%		91%	55%	

Mentoring Partner & Internal Factors		High Extent of Social Components								
		Personal Relationship (n= 24 ties 19% of all ties)			Dyadic Relationship (n= 24 ties 19% of all ties)			Social Capital (n=23 ties 18% of all ties)		
		Yes	No	Sig	Yes	No	Sig	Yes	No	Sig
Mentor Principals (cont.)										
Offers Honest Feedback	<i>Not Descriptive</i>	0%	17%	**	0%	17%		4%	16%	*
	<i>Moderately Descriptive</i>	4%	28%		4%	25%		9%	27%	
	<i>Very Descriptive</i>	96%	55%		96%	57%		87%	57%	
Offers Timely Feedback	<i>Not Descriptive</i>	0%	20%	***	0%	17%	*	4%	19%	**
	<i>Moderately Descriptive</i>	4%	31%		12%	26%		9%	30%	
	<i>Very Descriptive</i>	96%	49%		88%	57%		87%	51%	
Helps Identify Goals	<i>Not Descriptive</i>	0%	25%	***	0%	25%	***	0%	25%	***
	<i>Moderately Descriptive</i>	4%	32%		8%	31%		4%	31%	
	<i>Very Descriptive</i>	96%	43%		92%	44%		96%	44%	
Helps Achieve Goals	<i>Not Descriptive</i>	0%	22%	***	0%	22%	**	5%	21%	**
	<i>Moderately Descriptive</i>	0%	28%		5%	27%		9%	27%	
	<i>Very Descriptive</i>	100%	50%		95%	51%		86%	52%	
Assigns Meaningful Tasks	<i>Not Descriptive</i>	0%	22%	**	0%	22%	**	4%	21%	
	<i>Moderately Descriptive</i>	8%	19%		4%	20%		13%	18%	
	<i>Very Descriptive</i>	92%	59%		96%	58%		83%	61%	
Provides Support	<i>Not Descriptive</i>	0%	24%	***	0%	24%	***	0%	24%	**
	<i>Moderately Descriptive</i>	0%	27%		4%	26%		13%	24%	
	<i>Very Descriptive</i>	100%	49%		96%	50%		87%	52%	

Statistical significance (Sig): † =p≤.10; *p≤.05; **p≤.01; ***p≤.00; na = analyses could not be run

Table 6

Internal Factors of Mentoring Relationship Ties and Relational Embeddedness Degree and Type (n=128 ties)

Internal Factors		Degree of Relational Embeddedness													Sig	
		Degree & Type of Relational Embeddedness											Full	Sig		
		Uni-dimensional (1)					Bi-dimensional (2)									
		None (0)	Uni-dimensional (1)	Bi-dimensional (2)	Full (3)	Sig	None	Personal	Competency	Hollow	Isolated	Functional				Latent
Prospective Education Leaders																
Demographic (sex)	<i>Female</i>	45%	100%	60%	100%	***	51%	100%	60%	71%	86%	25%	51%	88%	†	
	<i>Male</i>	55%	0%	40%	0%		49%	0%	40%	29%	14%	75%	49%	12%		
Takes Responsibility	<i>Not Descriptive</i>	10%	0%	0%	0%		10%	0%	0%	0%	0%	0%	0%	0%	na	
	<i>Moderately Descriptive</i>	18%	29%	27%	25%		23%	40%	0%	43%	14%	0%	0%	12%		
	<i>Very Descriptive</i>	72%	71%	73%	75%		67%	60%	100%	57%	86%	100%	100%	88%		
Contributes Resources	<i>Not Descriptive</i>	23%	12%	0%	0%	*	25%	0%	0%	0%	0%	0%	0%	0%	na	
	<i>Moderately Descriptive</i>	24%	53%	27%	25%		36%	40%	0%	29%	29%	0%	0%	12%		
	<i>Very Descriptive</i>	52%	35%	73%	75%		39%	60%	100%	71%	71%	100%	100%	88%		
Asks for Help	<i>Not Descriptive</i>	20%	6%	7%	13%		23%	0%	0%	0%	0%	0%	0%	0%	na	
	<i>Moderately Descriptive</i>	23%	24%	20%	63%		34%	0%	20%	14%	0%	0%	14%	0%		
	<i>Very Descriptive</i>	57%	71%	73%	25%		43%	100%	80%	86%	100%	100%	86%	100%		
Mentor Principals																
Demographic (sex)	<i>Female</i>	37%	67%	20%	63%		42%	40%	40%	0%	14%	25%	25%	63%	†	
	<i>Male</i>	63%	53%	80%	37%		58%	60%	60%	100%	86%	75%	75%	37%		
Listens	<i>Not Descriptive</i>	27%	12%	0%	25%		31%	0%	0%	14%	0%	0%	0%	0%	na	
	<i>Moderately Descriptive</i>	19%	6%	13%	25%		21%	0%	20%	14%	0%	25%	0%	0%		
	<i>Very Descriptive</i>	53%	82%	87%	50%		58%	100%	80%	71%	100%	75%	100%	100%		

Internal Factors		Degree of Relational Embeddedness													
		Degree & Type of Relational Embeddedness											Full	Sig	
		Uni-dimensional (1)			Bi-dimensional										
		None (0)	Uni-dimensional (1)	Bi-dimensional (2)	Full (3)	Sig	None	Personal	Competency	Hollow	Isolated	Functional	Latent		
Mentor Principals (cont.)															
Makes Time	<i>Not Descriptive</i>	26%	12%	0%	25%		31%	0%	0%	0%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	15%	24%	33%	12%		25%	0%	0%	29%	0%	0%	0%	0%	
	<i>Very Descriptive</i>	56%	64%	67%	63%		44%	100%	100%	71%	100%	100%	100%	100%	
Follows Through	<i>Not Descriptive</i>	17%	6%	0%	0%	†	0%	18%	0%	0%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	26%	29%	7%	50%		0%	43%	40%	29%	0%	0%	0%	0%	
	<i>Very Descriptive</i>	57%	65%	93%	50%		100%	49%	60%	71%	100%	100%	100%	100%	
Offers Honest Feedback	<i>Not Descriptive</i>	19%	6%	0%	0%	†	19%	0%	0%	14%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	24%	6%	33%	37%		30%	0%	20%	14%	14%	25%	0%	0%	
	<i>Very Descriptive</i>	57%	88%	67%	63%		51%	100%	80%	71%	86%	75%	100%	100%	
Offers Timely Feedback	<i>Not Descriptive</i>	21%	6%	7%	12%	*	23%	0%	0%	14%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	28%	0%	33%	50%		32%	0%	40%	29%	14%	0%	0%	0%	
	<i>Very Descriptive</i>	52%	94%	60%	38%		45%	100%	60%	57%	86%	100%	100%	100%	
Helps Identify Goals	<i>Not Descriptive</i>	22%	6%	27%	22%		23%	0%	0%	14%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	30%	12%	13%	27%		32%	40%	40%	29%	14%	0%	0%	0%	
	<i>Very Descriptive</i>	48%	82%	60%	51%		45%	60%	60%	57%	86%	100%	100%	100%	
Helps Achieve Goals	<i>Not Descriptive</i>	22%	13%	27%	7%		25%	0%	0%	14%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	21%	7%	13%	47%		31%	0%	0%	14%	25%	25%	25%	25%	
	<i>Very Descriptive</i>	58%	80%	60%	41%		44%	100%	100%	71%	75%	75%	75%	75%	
Assigns Meaningful Tasks	<i>Not Descriptive</i>	23%	6%	12%	22%	*	25%	0%	0%	14%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	13%	12%	50%	27%		22%	0%	0%	14%	0%	25%	0%	12%	
	<i>Very Descriptive</i>	65%	82%	38%	51%		53%	100%	100%	71%	100%	75%	100%	88%	
Provides Support	<i>Not Descriptive</i>	26%	0%	0%	25%	†	28%	0%	0%	0%	0%	0%	0%	0%	na
	<i>Moderately Descriptive</i>	19%	24%	27%	38%		27%	0%	20%	43%	0%	0%	0%	0%	
	<i>Very Descriptive</i>	55%	76%	73%	38%		44%	100%	80%	57%	100%	100%	100%	100%	

Statistical significance (Sig): † =p≤.10; *p≤.05; **p≤.01; ***p≤.00; na = analyses could not be run

Table 7

External Factors of Mentoring Relationship Ties and Relational Embeddedness Social Components (n=128 ties)

External Factors		High Extent of Social Components								
		Personal Relationship (n=24; 19% of all ties)			Dyadic Interaction (n=24; 19% of all ties)			Social Capital (n=23; 18% of all ties)		
		Yes	No	Sig	Yes	No	Sig	Yes	No	Sig
Internship Structure	<i>Full-time</i>	37%	47%		37%	47%		61%	42%	‡
	<i>Part-time</i>	63%	53%		63%	53%		39%	58%	
Previous History	<i>Known</i>	75%	49%	**	80%	48%	***	75%	49%	**
	<i>Not Known</i>	25%	51%		20%	52%		25%	51%	

Statistical significance (Sig): ‡=p≤.10; *p≤.05; **p≤.01; ***p≤.00; na = analyses could not be

Table 8

Relationship Between External Factors and Relational Embeddedness (Degree and Type) in Mentoring Ties (n=128 ties)

External Factors		Degree of Relational Embeddedness														
		None (0)	Uni-dimensional (1)	Bi-dimensional (2)	Full (3)	Sig	Degree & Type of Relational Embeddedness									Sig
							None	Uni-dimensional			Bi-dimensional			Full		
							Personal	Competency	Hollow	Isolated	Functional	Latent				
Internship Structure	<i>Full-time</i>	37%	59%	67%	62%	†	45%	20%	40%	57%	14%	75%	100%	37%		
	<i>Part-time</i>	63%	41%	33%	38%		55%	80%	60%	43%	86%	25%	0%	63%		
Relationship History	<i>Known</i>	52%	65%	47%	63%	†	44%	80%	60%	71%	71%	100%	50%	88% †		
	<i>Not Known</i>	48%	35%	53%	37%		56%	20%	40%	29%	29%	0%	50%	12%		

Statistical significance (Sig): † = p ≤ .10; *p ≤ .05; **p ≤ .01; ***p ≤ .00; na = analyses could not be run

Table 9

Percentage of Mentoring Ties by Relationship History and Design of the Internship Structure

Relationship History	Design of the Internship Structure	
	<i>Full-Time</i>	<i>Part-Time</i>
Previously Worked With	13%	87%
Socialized Outside of Work Setting	25%	75%
Known by Reputation Only	81%	19%
Not Previously Known	51%	49%
Significance		***

Statistical significance (Sig): †=p≤.10; *p≤.05; **p≤.01; ***p≤.00; na = analyses could not be run

Table 10

Summary of Significant Findings

	Relational Embeddedness				Degree	Type
	Social Components					
	Personal Relationship	Dyadic Interaction	Social Capital			
Prospective Education Leader						
Demographic (sex)	**				***	†
Internal Factors						
<i>Takes Responsibility</i>		*				na
<i>Contributes Resources</i>	**	**	**		**	na
<i>Asks for Help</i>	***	***	***			na
Mentor Principals						
Demographic (sex)						na
Internal Factors						
<i>Listens</i>	*	***	***			na
<i>Makes Time</i>	**	**	**			na
<i>Follows Through</i>	**	**	**		†	na
<i>Offers Honest Feedback</i>	†		**		†	na
<i>Offers Timely Feedback</i>	*	**	***		*	na
<i>Helps Identify Goals</i>	***	***	***			na
<i>Helps Achieve Goals</i>	**	***	***			na
<i>Assigns Meaningful Tasks</i>	†	**	**		*	na
<i>Provides Support</i>	**	***	***		†	na

Statistical significance (Sig): †=p≤.10; *p≤.05; **p≤.01; ***p≤.00; na = analyses could not be run

Table 11

Percentage of Social Components of Relational Embeddedness by Educational Outcomes of Learned and Gained Confidence

Social Components	Educational Outcomes				Significance
	<i>Learned "Tricks of the Trade"</i>		<i>Gained Confidence as a School Leader</i>		
<i>Personal Relationship</i>	<i>Somewhat</i>	0%	<i>Somewhat</i>	0%	***
	<i>Moderately</i>	8%	<i>Moderately</i>	8%	
	<i>Very</i>	92%	<i>Very</i>	92%	
<i>Dyadic Interaction</i>	<i>Somewhat</i>	0%	<i>Somewhat</i>	0%	***
	<i>Moderately</i>	8%	<i>Moderately</i>	8%	
	<i>Very</i>	92%	<i>Very</i>	92%	
<i>Social Capital</i>	<i>Somewhat</i>	0%	<i>Somewhat</i>	0%	**
	<i>Moderately</i>	8%	<i>Moderately</i>	9%	
	<i>Very</i>	92%	<i>Very</i>	91%	

Statistical significance (Sig): †=p≤.10; *p≤.05; **p≤.01; ***p≤.00; na = analyses could not be run

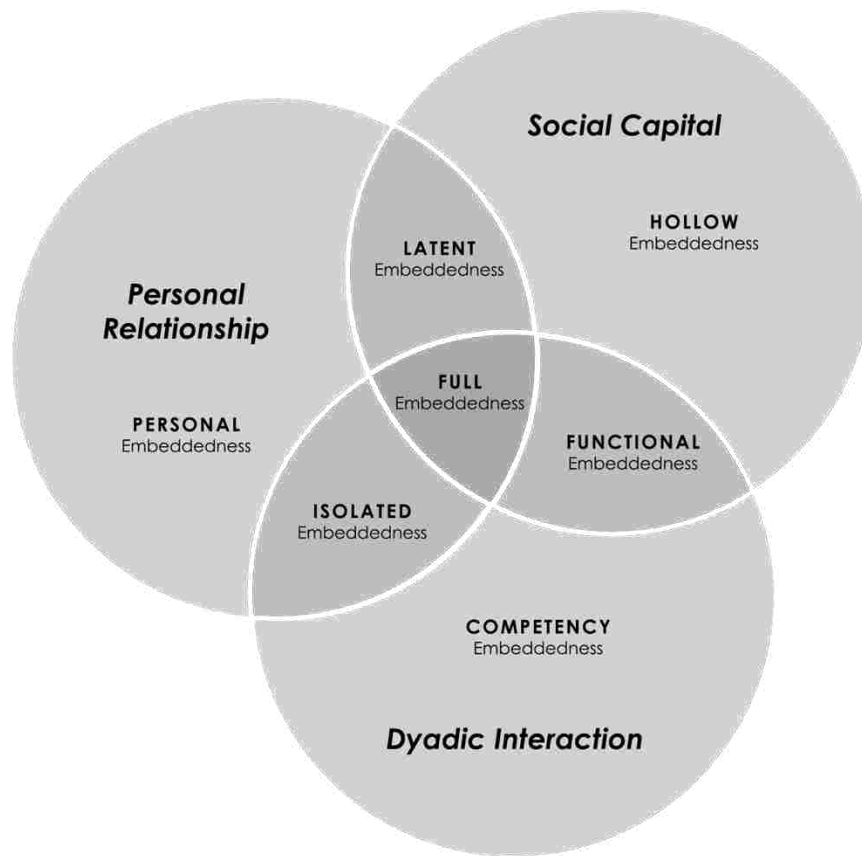


Figure 1. Typology of relational embeddedness (adapted from Hite, 2003)

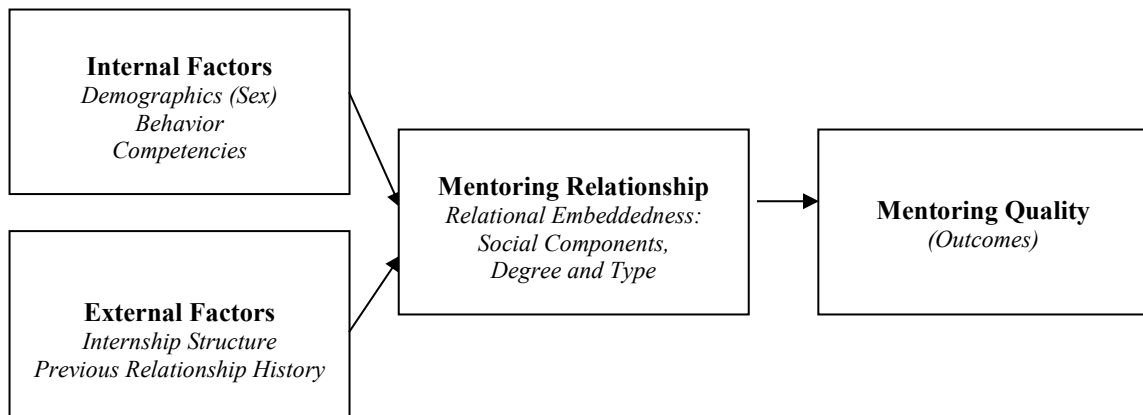


Figure 2. Internal and external factors, mentoring relationship and mentoring quality

APPENDIX A: EXTENDED LITERATURE REVIEW

During the last decade changes in technology, globalization, diversity and organizational restructuring have affected the context in which careers unfold. According to Higgins and Kram (2001), the stable, hierarchal organizations of the past have given way to more flexible, team-based structures in order to meet the complex demands of an increasingly global and technologically sophisticated workplace. Such dynamic changes can have direct implications for the nature of individuals' relationships at work, and many feel the effects of uncertainty and isolation and wonder "how to develop professionally and where to look for assistance" (p. 267).

These changes in organizations are mirrored in educational settings (Catano & Stronge, 2006; DiPaola & Tschannen-Moran, 2003), where too many principals feel "isolated, lonely, desperate, and sometimes unsuccessful about school management" (Yirci & Kocabas, 2010, p. 6). As educational leaders report a sense of personal inadequacy and isolation, principal turnover has been on the rise (Lashway, 2003; Mullen & Cairns, 2001). In 1998, a study commissioned by the National Association of Elementary School Principals and the National Association of Secondary School Principals found nearly half of the school districts reported a shortage in the labor pool for K-12 principals in the next few years (Catano & Stronge, 2006). Not only are principals leaving their schools, but unfortunately educators have increasingly avoided careers in administration for fear of taking on responsibilities filled with demands but little support (DiPaola & Tschannen-Moran, 2003).

This sense of disillusionment is little wonder when the role of principal has swelled to include a staggering array of professional tasks and required competencies (Catano & Stronge, 2006; Davis et al., 2005; Yirci & Kocabas, 2010). Davis et al., (2005) stated that principals are expected to be "educational visionaries...who can broker the often-conflicting interests of parents,

teachers, students, district office officials, unions, state and federal agencies....” (p. 1). In this complex environment and era of escalating accountability, the duties of principals far exceed traditional school management. In fact, many argue that the most important role of the principalship is as an instructional leader who can improve academic performance of children while at the same time attending to students’ emotional needs (merged).

An instructional leader must set the direction for schools that are positive and productive workplaces for teachers and vibrant learning environments for children (Elmore, 2008). Evidence suggests an effective principal can make a difference to student learning second only to the influences of classroom instruction (Davis et al., 2005; Leithwood, et al., 2004). Indeed, student learning may well depend upon principals who can foster the conditions that sustain educational reform in a complex and rapidly changing society (Fullan, 2002).

The challenge to build and sustain school improvement that leads to student achievement for all students requires knowledge, skills and experience. However, Elmore (2008) cautioned, “School leaders are being asked to assume responsibilities they are largely unequipped to assume, and the risks and consequences of failure are high for everyone, but especially high for children” (p. 43). Thus, it is critical that leaders are prepared in ways that enable them to effect dynamic school change that can positively impact student learning (Catano & Stronge, 2006; Orr, 2011).

Clearly, the principalship is at a crossroad and the skills needed by school leaders cannot be acquired through on-the-job training alone (Godshalk & Sosik, 2007). Many feel that principal preparation programs must do a better job and take the lead to provide the resources and capacity that will empower prospective educational leaders (Catano & Stronge, 2006; Cunningham & Sherman, 2008; DiPaola & Tschannen-Moran, 2003; Levine, 2006). DiPaola

and Tschannen-Moran (2003) stated: “although much has been invested in the principalship in hopes for school reform, there are concerns that the resources to make these growing expectations realistic have not been forthcoming” (p. 48). Levine (2006) called the current level of educational leader preparation removed and irrelevant—a “race to the bottom of effective leadership preparation” (p. 23). Similarly, Hite and Matthews (2005) called for educational leadership preparation programs to demonstrate value and positively influence the development of potential leaders.

To better prepare school leaders, the Interstate School Leaders Licensure Consortium (ISLLC) Standards (2008) redefined its definition of critical school leadership skills by establishing a common core of national standards of effectiveness and performance-based systems of assessment and evaluation (Catano & Stronge, 2006). Since 2008, ISLLC has expanded its criteria to include a seventh standard that prospective educational leaders engage in meaningful internships with experienced leaders (Catano & Stronge 2006). These professional standards and expectations require opportunities to apply newly acquired knowledge gained in the classroom to authentic administrative practice during internship experiences. The importance of effective preparation consisting of carefully mentored internships for educational leaders was emphasized in Davis et al., (2005) who stated that educational leaders who participated in high-quality internship experiences scored higher on ISLLC performance assessments, received higher performance evaluations from their supervisors and were perceived by teachers as being more effective in managing their schools. The focus on preparation must be on developing instructional leadership skills, and mentored internships seem to be the best way to enable prospective educational leaders to acquire these skills (Yirci & Kocabas, 2010).

High-quality mentoring relationships formed during education leadership preparation programs may be one key component to equip prospective leaders with the capacity and resources for effective school leadership (Alsbury & Hackmann, 2006; Daresh, 2004; Davis, et al., 2005; DiPaola & Tschannen-Moran, 2003; Levine, 2006; Mullen & Cairns, 2001; Petzco, 2008; Williams et al., 2004; Yirci & Kocabas, 2010). Ideally, these high-quality mentoring relationships provide candidates with an intense, extended opportunity to grapple with the day-to-day demands of school administration under the watchful eye of an expert mentor (Daresh, 2004). Regarding the importance of these mentoring relationships, Mullen and Cairns (2001) stated: “nothing can probably accomplish [effective educational leadership preparation] better than a live, on-site mentoring experience” (p. 150).

The purpose of this literature review is to better understand the nature of mentoring relationships formed between prospective educational leaders and their mentor principals and to explore the potential relationship between internal factors of demographic characteristics, personality and/or competencies as well as external factors of the design of internship structures and the context in which the internship takes place and the relational embeddedness that may be developed in the dyadic tie. Relational embeddedness—the type and degree to which partners form ties embedded within a social relationship (Granovetter, 1992; Hite, 2003, 2008)—may be a key indicator of quality in mentoring relationships which in turn can affect outcomes such as acquiring effective leadership skills that can boost student achievement in schools.

Thus to better understand the nature and potential of mentoring relationships in educational leadership preparation programs, theoretical foundations in mentoring and social network theory will be utilized. This review will address mentoring and mentoring relationships from a theoretical lens of learning and development. General outcomes and antecedents of high-

quality mentoring relationships will be discussed as well as an overview of how mentoring relationships are currently being applied in educational leadership preparation programs.

Next, a theoretical framework of social network theory—specifically utilizing the construct of relational embeddedness will examine the potential variation of dyadic ties. The potential variation in relational embeddedness between prospective educational leaders and their mentor principals may be based on internal factors such as demographic characteristics, personality and/or competencies as well as external factors related to the design of the internship structure or the context in which the internship takes place during educational leadership preparation programs. The type or degree of the relational embeddedness developed between the prospective educational leaders and their mentor principal(s) may influence outcomes such as mentoring quality.

Over 100 articles from the recent literature on mentoring and social network theory were reviewed. Articles were selected to include studies exploring general outcomes and antecedents of high-quality mentoring relationships as well as research in the domain of social network theory describing how variations in relational embeddedness can influence outcomes in dyadic ties. Findings can aid administrators in educational leadership preparation programs as they seek to design internship experiences that facilitate relational embeddedness to prepare future educational leaders to overcome challenges and become impactful instructional leaders who can make a difference in schools.

Mentoring and Mentoring Relationships

Mentoring has its roots in learning and development. Lave and Wenger (1991) first described a model of learning and development as the theory of Legitimate Peripheral Participation (LPP). LPP explains how novices begin on the periphery of a community practice.

By participating with experienced others they eventually gain access to the resources and skills of the practicing community. According to Lave and Wenger (1991), becoming an expert or moving toward the center of practice in a given community is based upon these three theoretical propositions: (a) the development of human knowing occurs through participation and activity among people from the socially and culturally structured world;(b) knowledge is socially mediated and open to humans with the ability to act or the intentionality to interact with the community; and (c) humans can be changed in the course of the activity. In a similar manner, learning and development or moving toward the center of expert practice in the community of educational leaders, may occur as a result of participating in a mentoring relationship.

Using the theory of Legitimate Peripheral Practice (LPP), Lankau and Scandura (2007) explained that moving closer to the center of practice is a process of “increasing connectedness to others and moving through increasingly complex states of interdependence... [requires] new experiences, self-awareness, feedback, empathy and social support, and real-time reflection” (p. 117). Williams, et al., (2004) adapted the theory of Legitimate Peripheral Participation (LPP) specifically to mentoring relationships in educational leadership preparation programs. They emphasized the importance of quality mentoring experiences by stating that prospective educational leaders must “fully participate [with experienced practitioners] ...for sustained periods to absorb the collective wisdom, conceptual tools and culture of the community of educational leaders” (p. 68). As prospective educational leaders participate with more experienced mentor principals, they can acquire knowledge for the particular organizational role of an education administrator, understand expected behaviors, and assume the values and attitudes required by that community of practice (Chau, Ingram, & Morris, 2008).

The Zone of Proximal Development (ZPD) is another social learning theory that can be applied to mentoring relationships. Described by Vygotsky (1978), the ZPD is the “distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in the collaboration with more capable peers” (p. 86). Vygotsky theorized that if a more experienced other encouraged the potential of another by providing a balance between appropriate challenges and consistent support then learning and development would be exponentially increased.

In 2007, the theory of ZPD was applied to leadership development as a way to utilize the power of relationships as a source of learning, feedback and coaching (McCauley & Guthrie, 2007). McGowan, Stone, and Kegan (2007) stated the importance of a mentoring relationship as a “safe holding environment from which the self can grow, change, and evolve” (p. 405). This kind of development can be particularly essential for prospective educational leaders. As the distance between the prospective educational leader’s performance and his or her potential narrows by participating with their mentor principal(s), the resources, strategies and skills for effective school leadership can be acquired and incorporated into practice.

The amount of care in relationships may also be critical to significant learning and developmental in mentoring relationships. Boyatzis (2007) stated that the capacity for compassion is the ability to empathize, express caring, and act in response to another’s feelings. These important characteristics of caring in relationships have the potential to impact moral education (Noddings, 1984). Noddings (1984) further described a reciprocal caring relationship in its most basic form as a connection between two human beings—the *one-caring* and the *one cared-for*. Noddings explained that attitudes and behaviors such as modeling, dialogue, practice

and confirmation demonstrate care in a relationship. By combining this kind of care with an intentional effort to extend needed support, Noddings stated that the learning and development of education leaders, teachers and children would increase the effects of moral education in schools. Thus, learning and development in mentoring relationships can be enhanced by gaining access to the knowledge and skills at the center of practice, providing a balance between challenge and support and interacting with others in caring ways.

Mentoring relationships can be initiated through informal or formal methods. According to Social Exchange Theory, individuals enter into informal relationships based upon perceived similarity; mutual liking, identification and attraction in which they believe the rewards will be greater than the costs (Allen, Lentz, & Eby, 2006). Informal mentoring relationships are quite common given that most adults can identify someone who has informally mentored their careers (Darwin, 2004). Formal mentoring relationships, on the other hand, are more structured and often initiated, assigned or brokered through a sponsoring organization. Hansford and Ehrich (2006) offered the following definition of formal mentoring:

Formal mentoring is a structured and coordinated approach to mentoring where individuals (mentees paired with more experienced persons) agree to engage in a personal and confidential relationship that aims to provide professional development, growth, and varying degrees of personal support. (p. 39)

While the beneficial aspects of social attraction found in informal relationships may initially be absent, formal mentoring can extend advantages to populations such as women and minorities who may not receive as many mentoring opportunities through informal arrangements (Allen et al., 2006; Turban & Lee, 2007). Another advantage of formal mentoring relationships is that high-quality mentoring is not derived from initial attraction but rather from the relational

skills of the partners in the relationship and is, therefore, available as a learned skill (Fletcher & Ragins, 2007).

Traditional forms of mentoring, formal or informal have been characterized by descriptions of a wise mentor who shapes and guides the life of younger, less-experienced protégé. As early as 1983, Merriam offered a definition of mentoring as a “powerful emotional interaction between an older and younger person, a relationship in which the older member is trusted, loving and experienced in the guidance of the younger” (p. 162). Research suggests, however, that traditional definitions of mentoring can no longer meet all of the needs of individuals facing diverse and dynamic organizational contexts and careers (Ehrich et al., 2004). In response, the definition of mentoring has been expanded to reflect a more relational approach. Fletcher and Ragins (2007) defined relational mentoring as “an interdependent and generative developmental relationship that promotes mutual growth, learning and development within the career context” (p. 374). Thus, relational mentoring offers potential benefits to both mentors and protégés.

Kram and Isabelle (1985) emphasized maximum learning and development in mentoring relationships needs to be mutually enhancing so that the growth and development of each partner is addressed. In mutually-enhancing mentoring relationships, both partners are responsible for their own learning at the same time assisting the learning and development of the other. Thereby the potential for both partners to receive benefits is increased (Clutterbuck, 2005; Fletcher & Ragins, 2007). Thus, mutuality is present when both partners in a relationship receive mutual, though not necessarily the same benefits. According to Dobrow et al. (2012), both partners in a mutually-beneficial mentoring relationship “influence each other, agree on roles and boundaries in the relationships, are aware of their impact on each other and understand one another’s

intentions” (p. 215). Such mutuality may open processes that can generate mutual growth, learning, and development and lead to increased satisfaction (Fletcher & Ragins, 2007).

Traditional forms of mentoring have also been re-conceptualized from a single tie between one mentor and one protégé to a more developmental network consisting of a number of relationships that support a focal or ego-centric individual (Chandler & Kram, 2005; Higgins & Kram, 2001). Lankau and Scandura (2007) stated “individuals may need a diverse network of mentors to assist them in continuous learning and development of new expertise” (p. 104). Developmental mentoring networks that consist of multiple mentors from inside and outside the organization can provide both career and psychosocial benefits and offer a variety of strengths, expertise and experiences (Chao, 2007; Dougherty & Dreher, 2007; Higgins, Chandler, & Kram, 2007).

Kram first discussed functions of mentoring in 1983. She described career functions as those aspects of mentoring that provided networking within an organization and offered feedback and strategies for accomplishing work objectives. With psychosocial functions, on the other hand, the mentor is a role model showed positive regard and built confidence through support and encouragement (Kram & Isabella, 1985; Kram, 1983). In 2007, Ragins and Kram found that mentoring relationships in which career functions were strong associated with increased compensation and advancement for protégés. Similarly, relationships high in psychosocial functions increased job satisfaction for protégés (Dobrow, et al., 2012; Singh, Ragins, & Tharenou, 2009). In summary, both traditional and modern configurations of mentoring relationships are valuable for achieving a variety of career and psychosocial benefits.

Outcomes of mentoring. The literature on mentoring relationships suggests a majority of positive outcomes for protégés, mentors and organizations. Studies on protégé benefits were

most prevalent in the literature. For example, Ehrich et al., (2004) stated that over 42% of protégés surveyed said that support, empathy, encouragement, counseling and friendship were the foremost benefits received from mentoring. Yirci and Kocabas (2010) noted that major positive outcomes for protégés included support and empathy, eased loneliness and reduced isolation. Boyatzis (2007) claimed that mentoring relationships increased socialization of protégés in new environments. Protégés' self-awareness, communication, and goal clarity were also increased (Clutterbuck, 2005). Finally, Hansford and Ehrich (2006) and Eby (2007) found increased capacity and professional development in protégés as they exchanged ideas with their mentors.

Benefits to mentors were also cited in the literature and included improved work attitudes and job performance, increased recognition by others and greater satisfaction as well as personal development, learning and motivation (Allen, Eby, O'Brien, & Lentz, 2008; Engstrom, 2004). Similarly, Hansford and Ehrich (2006) found that mentors benefitted in mentoring relationships by networking, professional development and an increased opportunity to reflect.

Organizations also gained benefits from mentoring. When organizational cultures emphasized learning through mentoring relationships, innovation was increased while job turnover decreased (Dawley, Andrews, & Bucklew, 2010). Learning, socialization and increased motivation were also reported in organizations that had a mentoring culture (Boyatzis, 2007; Chao, 2007; Eby, 2007; Ehrich et al., 2004; Hansford & Ehrich, 2006). Similarly, organizations that showed strong support for mentoring relationships as vehicles for personal learning and development increased successful performance outcomes in challenging assignments (Chandler & Kram, 2005). Singh et al., (2009) found that mentoring relationships added value to organizations above and beyond other forms of social capital in predicting promotion,

advancement and reducing turnover. Thus, the literature suggested an abundance of evidence that mentoring relationships benefitted protégés, mentors and the organizations in which they were embedded. However, not all mentoring relationships are alike. Given that the nature of mentoring relationships can affect outcomes, variations in mentoring relationships likely do not have the same potential to influence outcomes.

Antecedents of mentoring. The literature suggested that a variety of internal attributes of the actors in a mentoring relationship, as well as external factors present in the environment in which the relationship was embedded, can shape the development as well as the quality of mentoring relationships (Allen, 2007; Baugh & Fagenson-Eland, 2007; Boyatzis, 2007; Chao, 2007; Cherniss, 2007; Clutterbuck, 2004a, 2004b, 2005; Ehrich et al., 2004; Engstrom, 2004; Lane, 2004; Turban, Dougherty & Lee 2002; Wanberg et al., 2006). Internal factors may include such characteristics as the gender (sex) or age of the actors in a mentoring relationship and attributes of personality or competencies such as learned skills. External factors that may influence the quality or outcomes in a mentoring relationship included the manner in which partners were paired (i.e., formally or informally), the type of mentoring relationship (i.e., traditional or developmental) and/or the duration or frequency of the contact between the partners in the mentoring relationship.

Internal factors. Factors such as demographic characteristics, personality and competencies are unique to each individual partner in a mentoring relationship and can affect not only the variation that may exist but also the quality of the relationship. The quality of the mentoring relationship can in turn influence outcomes (Crow, 2012; Ehrich et al., 2004; Fletcher & Ragins, 2007; Hansford & Ehrich, 2006; Wanberg et al., 2006). For example, demographic characteristics including the gender, age or ethnicity of each partner in a mentoring relationship

suggest a variety of possible differences between partners. As individuals are drawn to those they perceive to be similar to themselves (Allen et al., 2006; Allen, 2007), homophily or similarity-attraction paradigm has been applied as an explanation for informal mentoring relationships. Formal arrangements of mentoring, however, are not dependent upon similarity or attraction alone as they are most often arranged or brokered through an outside agency. Thus the potential for differences, as well as opportunities, may be greater in formal mentoring arrangements where homophily is not the main determinant of the relationships (Allen et al., 2006; Turban & Lee, 2007).

Research has been conducted on the effects that gender (sex) differences may have on the mentoring relationship. Noe (1988) for example, found that females reported receiving significantly more psychosocial benefits (acceptance and confirmation, counseling, friendship, and role modeling) with female mentors than female protégés in cross-gender mentoring relationships. Male mentors with male protégés reported a lower quality relationship than did female mentors with female mentees and those in cross-gender dyads. Other outcomes including compensation and organization exposure have also been linked with the gender composition of mentoring relationships (Turban et al., 2002). Male and female protégés with a history of male mentors reported more compensation than protégés with a history of female mentors. Similarly, both male and female protégés in mentoring relationships with female mentors reported that their mentors provided less challenging assignments and therefore fewer outcomes of organizational exposure were reported than protégés paired with male mentors (Turban et al., 2002). Since differing compositions may influence functions and outcomes in mentoring relationships, Alsbury and Hackmann (2006) and Turban et.al, (2002) suggested that gender should be considered in the selection, matching and ongoing training of mentoring relationship partners.

While gender (sex) seems to be a factor that can affect the quality of a mentoring relationship, a recent meta-analysis called for more empirical evidence to support this possible link (Dobrow et al., 2012; Eby et al., 2013). Eby suggested that other internal factors such as duration or stage of the mentoring relationship play a greater moderating effect on the quality of the relationship than the gender compositions of the partners. She claimed that similarity with respect to values and goals was more important to positive mentoring relationships than similarity based upon gender alone.

A second internal characteristic in mentoring relationships that may affect the quality of the mentoring relationship is personality (Turban & Lee, 2007; Wanberg et al., 2006). Allen, Lentz and Eby (2006) suggested that when partners perceived personality similarity with respect to being open to experience, possessing a degree of imagination, intelligence, curiosity and originality, the reported quality of the relationship is higher. Similarly, Turban and Lee (2007) explained personality characteristics that tend to build or strengthen the mentoring relationship to include conscientiousness, extraversion, openness to experience, agreeableness, and neuroticism (emotional stability). Emotional maturity, which can be defined as the way in which people perceive, express, understand and manage emotion in themselves and others may also affect outcomes in mentoring relationships (Boyatzis, 2007; Cherniss, 2007). Cherniss (2007) stated that when “an individual’s capacity to form positive, safe relationships seems to be strongly influenced by his or her ability to manage the anxiety, uncertainty, and increasing intimacy of a mentoring relationship” (p. 665). Competencies or learned skills may also influence the quality of a mentoring relationship. Fletcher and Ragins (2007) identified a range of relational skills as prerequisites for partners in high-quality mentoring relationships to include the following: vulnerability, empathic and emotional competence, authenticity, and holistic thinking. Orland-

Barak and Hasin (2010) found star mentors were transformational leaders with competency in organizational skills, interpersonal relationships, integration of theory and practice, knowledge and expertise, challenge, modeling and reflexivity. Pro-activity of the partners was also linked to the quality of mentoring relationship as well as outcomes such as career and psychosocial benefits (Wanberg et al., 2006).

Clutterbuck (2005) stated that competencies such as listening, giving feedback, building trust and engaging in reciprocal behavior enhanced a mentoring relationship during different stages of a mentoring relationship. This situational approach to mentoring relationships based upon required skills through phases of mentoring relationship development suggests a degree of variability and choice as a mentor takes into account differing circumstances and intentionally adapts to meet the needs of the protégé (see Table A-1).

In a reciprocal or mutual mentoring relationship, protégés also contributed competencies that may affect the quality of mentoring relationships and the outcomes achieved. Protégé characteristics such as an internal locus of control (belief that outcomes may be under personal control), level of involvement, and belief of the value of the mentoring have been shown to affect outcomes (Engstrom, 2004). Similarly, the initiation, relationship management and learning competencies of the protégés aided the development of mentoring relationships (Clutterbuck, 2005). Higgins & Kram (2001) reported that help-seeking behavior in protégés can be a mediating process to aid the development of mentoring relationships. In summary, internal factors such as the demographic characteristics, personality and competencies of mentors and protégés may all influence quality and outcomes in mentoring relationships.

External factors. Factors within the environment in which mentoring partners are situated or embedded may also influence relationship quality and outcomes. These external

Table A-1

Situational Mentor Competencies

Mentoring Phase	Competencies
Building Rapport	Active listening, empathizing, giving positive regard, empathizing, offering openness and trust to elicit reciprocal behavior, identifying and valuing both common ground and differences
Setting Direction	Goal identification, clarification and management, personal project planning, testing mentee's level of commitment to specific goals, reality testing, helping the mentee focus on a few, achievable goals rather than on many pipedreams
Making Progress	Sustaining commitment, ensuring sufficient challenge in the mentoring dialogue, helping the mentee take increasing responsibility for managing the relationship, being available and understanding, helping the mentee cope with set backs
Winding Down	Manage the dissolution process
Moving On	Ability to redefine the relations when it has run its course

(adapted from Clutterbuck, 2005)

factors include methods of initiation (i.e., formally or informally created) and whether the relationship is traditional (e.g., with one mentor and one protégé) or developmental (i.e., comprised of one protégé as ego-centric or focal individual in relationship with several mentors) (Higgins & Kram, 2001). Other external factors that may influence the mentoring relationship or mentoring quality include the duration, location, and level where the mentoring relationship takes place. Frequency of contact between mentors and mentees and the amount and kind of

training each partner receives may also affect mentoring relationships and quality (Allen et al., 2006; Alsbury & Hackmann, 2006; Browne-Ferrigno & Muth, 2004; Crow, 2012; Davis et al., 2005; Turban & Lee, 2007).

In addition to these external factors, characteristics of culture in the sponsoring organizational to which the mentoring relationship is embedded may influence the quality of the relationship or the outcomes achieved. For example, if the organizational culture is conducive to mentoring or has a mentoring mentality, then goals, norms and values will support mentoring relationships and higher quality outcomes would be expected (Dawley et al., 2010).

Mentoring Relationships in Educational Leadership Preparation Programs

Initially, prospective educational leaders are resource poor—that is, they lack the knowledge, skills and experience necessary for effective leadership. One key to acquiring these resources is through a mentoring relationship formed during internship experience in authentic school settings (Daresh, 2004; Davis, et al., 2005; DiPaola & Tschannen-Moran, 2003; Levine, 2006; Mullen & Cairns, 2001; Petzco, 2008; Williams et al., 2004; Yirci & Kocabas, 2010). Hite & Matthews (2005) argued that mentoring relationships in educational leadership preparation programs create an administrative network tie that is “critical for effective leadership as they provide the conduits and bridges through which administrators can access and provide essential resources” (p. 16).

Mentoring relationships in educational leadership preparation programs are an important type of developmental activity for enhancing the potential learning and development of prospective education leaders. High-quality internships provide the intensive, developmental opportunities to apply leadership knowledge and skills under the guidance of an experienced mentor (Hite et al., 2005). Daresh (2004) suggested five benefits for mentees in educational

leadership programs. Mentees reported that they (a) increased confidence about their professional competence; (b) enhanced application of educational theory learned from university coursework to actual practice; (c) improved communication skills; (d) learned some *tricks of the trade* from expert mentors; and (e) enjoyed a heightened sense of belonging and socialization in their new settings as prospective school leaders. Thus, mentoring relationships in educational leadership preparation programs may hold a key for prospective educational leaders to acquire the knowledge, skills and experience of effective school leadership. Yet it is has only been in the last two decades that formal mentoring relationships were introduced into education leadership preparation programs (Jackson & Kelley, 2002). Formal mentoring relationships, such as those initiated through a sponsoring institution that matches mentors and protégés for a specified period of time, have been shown to provide an advantage in achieving shared visions, acquiring a wide range of valuable resources, managing knowledge and learning, encouraging and sustaining innovation, and facilitating effective communication (Baugh & Fagenson-Eland, 2007).

Mentoring relationships in educational leadership preparation programs can influence both career and psychosocial benefits for prospective educational leaders (Daresh, 2004; Davis, et al., 2005; DiPaola & Tschannen-Moran, 2003; Levine, 2006; Mullen & Cairns, 2001; Petzco, 2008; Williams et al., 2004; Yirci & Kocabas, 2010). Career benefits included greater career satisfaction, promotions and salaries (Dawley et al., 2010). Technical information and performance skills gained through internship experience also enable prospective educational leaders to meet the demands of effective school leadership (Lankau & Scandura, 2007). One important outcome of educational leadership mentoring relationships may be the introduction of prospective leaders into a new community of school administration in the larger social network. Such networks may aid prospective leaders as they seek future employment opportunities.

Psychosocial outcomes may also be available in mentoring relationships. Such benefits as socialization, exposure to new ideas, creativity, visibility and protection, opportunities for risk-taking, increased confidence and competence are listed in the literature as benefits for prospective educational leaders (Browne-Ferrigno, 2003; Browne-Ferrigno & Muth, 2004).

Mentor principals and schools as organizations also receive benefits from participating in internship mentoring programs. For example, mentor principals may have the opportunity to learn and sharpen skills; enjoy collegiality, increase career networks and gain personal satisfaction (Crow, 2012; Ehrich et al., 2004; Hansford & Ehrich, 2006). Schools, as organizations in partnership with university educational leadership preparation programs, expect to see benefits from their investment in providing formal mentoring relationships. Examples of such benefits include developing a more capable staff, bringing new insights into the practice, increasing teacher and staff motivation and receiving ongoing support in efforts to boost student achievement (Daresh, 2004). In addition to these organizational benefits, Browne-Ferrigno and Muth (2004) found that internship mentoring “improves, expands and deepens leadership capacity in schools...” (p. 489). Clearly, mentoring relationships formed between prospective educational leaders and their mentor principals can be a key social structure through which critical resources of knowledge, skills and experience necessary for effective leadership preparation may be exchanged. Thus, high-quality mentoring relationships are a valuable and effective strategy for strengthening prospective education leaders, their mentor principals and the schools as organizations in which they are embedded.

Social Network Theory

Although there seems to be a prevailing belief that mentoring matters (Ehrich, 2008), further explanation and empirical data is needed to unpack the construct of mentoring so that the

potential benefits of these relationships can best be realized. Social network theory lends a relevant theoretical framework for this study as it can provide explanations for the nature of mentoring relationships as dyadic network ties. Thus, the intersection between mentoring and social network theory stands to be a powerful lens for examining mentoring relationships in educational leadership preparation programs.

The study of social networks has broadened considerably from the traditional definition of mentoring between a senior mentor and a single protégé to a more developmental approach (Higgins & Kram, 2001). Developmental networks are a branch of social network theory that describes multiple relationships composed of “people a protégé names as taking an active interest in and action to advance the protégée’s career by providing developmental assistance” (p. 268). The notion of a developmental network is consistent with Kram and Isabella’s (1985) original assertion of a constellation of developmental relationships from varying social spheres such as relationships with family or members of a community (Chandler & Kram, 2005). Developmental network ties allow for multiple network ties that are inside or outside the organization.

These multiple network ties present an infinite variety of differences in the mentoring relationships themselves and allow for multiple services and benefits to individuals and organizations. Developmental network configurations recognize that it is no longer practical or reasonable to expect that a single mentor provide for all needs. Rather, globalization, technological innovations, and changes in organizational structure and demography make securing developmental assistance from a number of people more necessary than ever (Higgins & Kram, 2001). Thus a developmental relationship may reflect the realities in today’s career and

personal environments where reliance upon a single mentor has given way to the strategic advantages of multiple mentoring relationships.

A developmental network is a key tool for learning, development, and successful performance outcomes in challenging assignments and a valuable tool for achieving a variety of both career and personal outcomes (Chandler & Kram, 2005; Dobrow & Higgins, 2005; Dobrow et al., 2012; Higgins, et al., 2007; Singh et al., 2009). Career outcomes reported in the literature from developmental relationships include professional identity clarity, organizational commitment and work satisfaction (Higgins & Kram, 2001). Personal benefits from developmental relationships include such outcomes as increased learning and an enhanced sense of professional competence and identity (Dougherty & Dreher, 2007).

Dyadic ties and relational embeddedness. While developmental networks generally consist of an egocentric network, with one individual connected with a variety of different mentors, the basic unit of the developmental network is still a dyadic tie between two individuals. In order to access the benefits of traditional mentoring or developmental relationships, the nature of the dyadic network ties can be usefully explored using the theoretical framework of social network theory—specifically the constructs of dyadic ties and relational embeddedness.

According to social network theory, a dyadic tie consists of two actors and the tie that connects them embedded within the surrounding social network (Granovetter, 1973; Hite, 2003; Hite et al., 2005; Hite & Matthews, 2005; Uzzi, 1996). Hite (2008) emphasized the potential of these dyadic ties by stating that “dyadic ties represent potential bridges, conduits, or pipes through which different types of content may flow or be exchanged” (p. 139). The dyadic tie can provide the pathway through which social content flows, enabling the acquisition or exchange of

necessary human resources such as knowledge and skills. Variations in the nature of the dyadic ties between partners may offer explanations for the variety of outcomes that accrue to the individuals and their organizations.

While dyadic ties are multi-dimensional, one dimension of the nature of dyadic ties can be seen in the extent of relational embeddedness that binds two individuals in the relationship (Granovetter, 1973; Hite, 2003; Hite et al., 2005; Hite & Matthews, 2005; Uzzi, 1996). Embeddedness is to “enclose closely” or to “become an integral part of” something (Merriam-Webster Dictionary). Just as a grain of sand becomes embedded within an oyster and influences and is influenced by the surrounding environment, so too, dyadic ties can become embedded within the social nature of the relationship. The relationally embedded nature of dyadic ties can influence how and when the individual actors behave as they do and offers explanations for the resulting outcomes (Hite, 2011). Relational embeddedness is often seen when the individual actors prioritize the maintenance of the relationship over other priorities.

Granovetter (1973, 1983) coined the terms *strong ties* and *embedded ties* to indicate how a tie can be closely embedded within the interpersonal relationship. Granovetter (1973) proposed that dyadic ties become stronger due to the actions of partners who display high levels of social relationship depending upon the following elements: (a) the amount of time invested by one or more partners in the relationship; (b) the emotional intensity or the level of affect or affection demonstrated by one or the other of the partners; (c) the intimacy exchanged in the relationship; and (d) the reciprocal services which are sometimes a result of the obligations which characterized the ties.

Granovetter (1992) then distinguished between structurally and relationally embedded ties to separate embeddedness based on structural position and that based on the nature of the

tie's social relationship. Both he and the literature in general used the terms *relationally embedded ties* (1992) and *strong ties* interchangeably to refer to the phenomenon of network ties that are enmeshed or bound within the social nature of the relationship. Uzzi (1996) described strong ties exhibiting high levels of trust, fine-grained information transfer and problem solving. Both Granovetter (1973) and Uzzi (1996) described relationally embedded ties in terms of being strong, in contrast to weak or absent when lower levels of these characteristics were evident. Building on the work of Granovetter (1973) and Uzzi (1996), researchers have continued to explore the constructs of tie strength and relational embeddedness. For example, Jack, Dodd and Anderson (2004) defined ties as either tightly or loosely coupled. She found that frequent interaction and the closeness of the relationship influenced the quality of the dyadic tie. Hite (2011) summarized key features of strong ties found in the literature as including affect, reciprocity, intimacy, trust, fine-grained information transfer, joint problem solving, frequency and duration of contact.

Variation within relational embeddedness. A key theme in the relational embeddedness literature is that the social nature of dyadic ties is complex, variable and can change and develop over time. Thus the relational embeddedness of a tie would also be expected to vary and change (Hite, 2003). Incorporating both Granovetter's (1973, 1992) and Uzzi's (1996) explanations of strong ties and relational embeddedness, Hite (2003) proposed the Typology of Relational Embeddedness to clarify the potentially multi-dimensional nature of relational embeddedness in dyadic ties (see Figure A-1). Hite (2003) defined three overarching social components that can be found within dyadic ties: (a) *personal relationship*; (b) *dyadic interaction*; and (c) *social capital*. When one or more of these three social components are found within a tie to a high extent, they generate relational embeddedness.

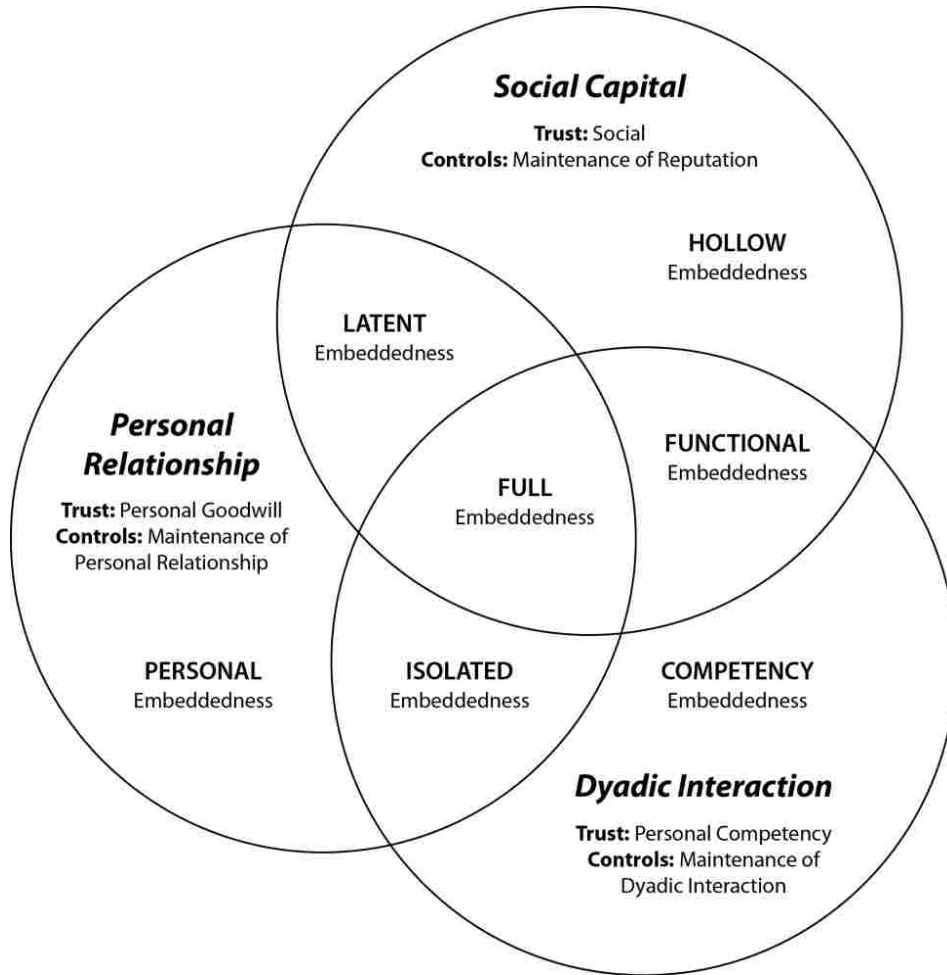


Figure A-1. Typology of Relational Embeddedness (Hite, 2003)

One social component of dyadic ties is *personal relationship* which is based upon three main attributes: personal knowledge, affect, and sociality. Personal knowledge is the extent to which the dyadic partners were aware of each other's personal needs and interested. It is based on each dyadic partner having a sense of similarity with the other. Affect is the extent to which feelings and emotions such as respect, loyalty to the tie, and caring were considered an integral part of the relationship. And, sociality is the degree to which the dyadic interaction takes on a social and personal nature such as engaging in activities outside the dyadic tie.

A second social component of dyadic ties is *dyadic interaction*. Dyadic interaction is based on the history of the exchange between the dyadic partners. It focuses on the processes of exchange rather than on the specific content that flows or is being exchanged. Interaction can be influenced by the volition or choice of one or both of the dyadic partners. The extent (range, scope and comprehensiveness of the interaction), effort (the level of energy or resources expended beyond expectation), ease (the level of comfort or reduction of tension and difficulty in the interaction), or value (the degree of excellence, merit, or superiority) of the exchange over time determine and affect the level of dyadic interaction within the tie.

Social capital is the third social component of dyadic ties. Social capital consists of the obligations, resource accessibility, brokering and structural embeddedness of the relationship. The degree to which obligations, resource accessibility, brokering or introductions to previously unknown third parties or to the mutual contacts that may exist (structural embeddedness) may affect outcomes.

Various combinations of these three social components produce seven types of relational embeddedness within dyadic ties in addition to the condition of the tie being *not* embedded. Thus, eight possible types of relational embeddedness exist: (a) *not embedded*; (b) *competency*; (c) *personal*; (d) *hollow*; (e) *functional*; (f) *isolated*; (g) *latent*; and (h) *full*. For each type, the degree of relational embeddedness is the number of social components that are present in the tie at high levels.

Not Embedded (degree=0) refers to ties without high levels of any of the three social components. Competency, personal and hollow ties are uni-dimensional (degree=1), each reflecting a high degree of just one the social components of relational embeddedness. Functional, isolated and latent ties are bi-dimensional (degree=2), each reflecting a high degree

of two social components. A tie with full relational embeddedness (degree=3) reflects high degrees of all three social components. The more connected or relationally embedded the dyadic tie, the higher the potential benefits may be.

According to Hite's (2003) typology, relationally embedded ties do not necessarily display all three social components equally. Rather, differing combinations explain the variety of the tie and clarify the degree of relational embeddedness that may exist within the dyadic tie. A dyadic tie that demonstrates a high extent of only one of the three social components is classified as uni-dimensionally embedded. When there are two social components clearly demonstrated, the tie is classified as bi-dimensionally embedded. When all three social components are demonstrated the tie is considered to be fully embedded. Conversely, the tie may contain no measurable degree of relational embeddedness and simply be labeled *not embedded*.

Each of these degrees of relational embeddedness can result in distinct advantages and disadvantages. For example, uni-dimensional embeddedness consisting of only one social component reflects only one type of trust (see Figure A-1 above). As a result of only one type of trust, uni-dimensional ties have the challenge that the tie may have not sufficient trust to sustain an effective relationship. Hite (2003) proposed that uni-dimensionally embedded ties "may be neither as stable nor as effective as more developed relationally embedded ties" (p. 35). An advantage of bi-dimensionally embedded ties is that they reflect two types of trust rather than just one. However, both uni-dimensional and bi-dimensional relational embeddedness lack specific social components, and a specific type of trust, both of which can result in social disadvantages. For example, isolated embeddedness exhibits a high extent of both personal relationship and dyadic interaction but a lesser extent of social capital (and social trust), which

may limit the opportunity for one partner to develop additional ties with other networks. Functional embeddedness exhibits a high extent of dyadic interaction and social capital but a lesser extent of personal relationship (and personal goodwill trust). This lack of personal relationship may be a disadvantage given that Hite (2005) found that the social component of personal relationship functioned as the critical foundation that supported the pathway that enabled a tie to more quickly evolve toward full embeddedness.

Fully embedded ties demonstrate high degrees in all three social components and, therefore, reflect all three types of trust. A fully embedded tie has a greater the likelihood that the relationship will have developed and can rely on a more effective base of trust (all three types). This type of relational embeddedness, with a greater number of types of trust between prospective educational leaders and their mentor principals in a mentoring relationship, can offer powerful advantages to the prospective educational leader such as the acquisition of critical resources of the knowledge and skills necessary for effective school leadership.

Outcomes of relational embeddedness. The variation that exists within relational embeddedness can affect potential differences in dyadic ties and, therefore, the outcomes that may be realized (Hite, 2003). The literature indicates that different types of relational embeddedness may be related to the acquisition of resources such as trust, commitment, information and problem solving (Chang, 2011; Granovetter, 1992; Hite, 2003; 2008; 2011; Huang & Chang, 2008). Strong or relationally embedded ties can facilitate identification of external opportunities (Granovetter, 1973; Uzzi, 1996) and can be a useful and safe platform from which to identify, recognize, evaluate and refine new opportunities that may not otherwise be known (Hite & Hesterly, 2001). Different types of relationally embedded ties may create different bridges to the larger network by facilitating broader communication and the exchange

of human and social capital (Hite, 2003). Thus, varying types of relational embeddedness may be related to identifying and exploiting resources and opportunities that lead to positive outcomes.

Hite (2003) proposed that relationally embedded ties are associated with differing types of trust based on each of the three social components of dyadic ties: personal goodwill trust, personal competency trust and social trust. Increased personal relationship would influence greater goodwill trust, deeper dyadic interaction would be related to expanded personal competency trust, and a higher extent of social capital would be related to an enlarged degree of social trust. Thus, the variation in relationally embedded network ties stands to influence outcomes of trust.

Antecedents of relational embeddedness. Dyadic ties like all social relationships present an almost infinite variety of individual characteristics and social contexts that affect and constrain the relationship (Hite, 2011). Granovetter (1973, 1992) and Uzzi (1996) found that internal factors such as the personality and the competency of the actors in the dyadic tie could affect the relational embeddedness that may be developed. Hite (2008) noted that the evolution of dyadic tie development is influenced by internal factors such as differing goals, orientations, experience, and the capabilities of the two actors. Proactivity, initiating behavior and the frequency, amount, or intensity of the interaction are all internal factors that have been shown to affect the relational embeddedness in a dyadic tie (Hite, 2008).

Research suggests that some internal factors are within the range of actors' volition. Layering and leveraging are choices or actions that can be used to increase the development of the dyadic tie (Hite, 2003; 2008). Layering is the process in relationship evolution where new social components are added to the existing tie. Layering additional social components of

personal relationship, dyadic interaction, or social capital to an already existing tie can increase the level of relational embeddedness and, thereby, the advantages available with a more fully embedded tie. Leveraging, on the other hand, uses the existing social components to increase additional social components, thus raising the level of relational embeddedness and strengthening the tie. For example, leveraging implies that an actor may leverage the personal relationship to increase obligations and norms of reciprocity within the tie, thus building social capital (Hite, 2008).

Factors external to the individual actors may also affect relational embeddedness. External factors such as the culture of the sponsoring organization have been shown to influence relational embeddedness (Huang & Chang, 2008). For example, if the organizational culture has formal and informal mechanisms for coordination or the transfer of knowledge then levels of trust, joint problem solving and commitment and innovation are increased. In an open culture that fosters the conditions that promote relational embeddedness, the opportunity to learn vicariously by observing others also increases (Huang & Chang, 2008). Relational embeddedness is developed when external factors favor the availability of resources—economic as well as human resources in the form of task advice or career guidance (Chau et al., 2008).

Measurement of relational embeddedness. While both Granovetter (1973) and Uzzi (1996) identified characteristics and benefits of strong and weak ties, they did not offer a way to capture or measure the relational embeddedness or its variation. Several researchers have extended Granovetter's (1973) strong and weak tie concept by exploring the characteristics and content of strong ties and concluding that rather than classifying ties as dichotomous either strong or weak, it is more helpful to move toward more complex models such as a continuum or typology (e.g., Higgins & Kram, 2001; Hite, 2003, 2005; Jack et al., 2004; Jack, 2005).

In 2001, Higgins and Kram proposed a Developmental Network Typology to differentiate strong ties based on the diversity of the tie's larger network. They proposed that when strong ties are differentiated by high and low range diversity, four types of developmental network ties may be formed as follows: *entrepreneurial*, *traditional*, *receptive* and *opportunistic*. Each of the four types of developmental network ties has distinct advantages and disadvantages (see Table A-2). In terms of differentiating strong ties, their model suggests that *entrepreneurial* developmental network ties, strong ties with a high range of diversity, can act as bridges by providing new ideas and facilitating innovation in ways not available within the tie. *Traditional* developmental network ties are those that are characterized as strong, close, and similar. However, while network partners in this strong tie network may be highly motivated to act on behalf of the individual because of similarity (low range diversity), they may also only offer a low range of information diversity. Thus, this typology suggestions variation in strong ties, and demonstrates another effort in the literature to distinguish between different types of strong ties. The Higgins and Kram (2001) model further distinguishes between different types of weak ties. *Receptive* developmental network ties are weak ties that come from the same social system and likely provide similar or redundant information. The term *receptive* used by the authors suggests that the protégé is open to receiving assistance but does not actively initiate or cultivate more diversified developmental relationships. As a result, the potential for a diversity of resource acquisition is hindered (see Table A-2). Finally, weak ties that also have a high range of diversity characterize opportunistic developmental network ties. Thus, this type of developmental network tie can provide a variety of information sources to support and sustain greater innovation.

Table A-2

Developmental Network Tie Typology

		Developmental Relationship Strength	
		Weak Ties	Strong Ties
Developmental Relationship Diversity	Low Range	Receptive Ties	Traditional Ties
	High Range	Opportunistic Ties	Entrepreneurial Ties

(Adapted from Higgins & Kram, 2001, p. 270)

In response to the need to understand the multi-dimensional nature of relationally embedded ties, Hite et al., (2011) developed instrumentation for the measurement of variation in relational embeddedness based on Hite's (2003) Typology of Relational Embeddedness. The Typology of Relational Embeddedness Network Data Survey (TRENDS) (Hite et al., 2011) identifies the type and degree of relational embeddedness of dyadic ties and thus enables the identification of the multiple dimensions of relationally embedded ties. This network survey instrument contains items that measure each of the three social components of relational embeddedness.

The TRENDS survey has been found to be valid instrument for identifying variation within relationally embedded ties among dyadic academic network ties in higher education (Hite et al., 2011). Clearly, broad agreement exists in the literature generally that mentoring relationships can be a tool that benefits both individuals within the dyadic tie as well as the organizations in which their relationship is embedded. However, little is yet known about the nature of relational embeddedness in mentoring relationships and what factors may influence variations in the type and degree of relational embeddedness. Yet, this variation stands to influence mentoring outcomes such as the acquisition of critical resources of knowledge, skills and experience. In order to facilitate acquisition of these essential resources, more empirical

evidence is needed to explore the nature of relational embeddedness that may be developed between educational leaders and their mentor principals. This study specifically examines how internal and external factors may be related to the variation of relational embeddedness within these mentoring relationships and represents an initial step into understanding the nature of relational embeddedness between prospective educational leaders and their mentor principals.

Relationally embedded mentoring relationships in educational leadership preparation programs. Mentoring relationships are an important type of developmental activity for enhancing the learning and growth of prospective education leaders. Mentoring relationships formed during internships in educational leadership preparation programs give prospective educational leaders the opportunity to put coursework and theory into practice and provide the opportunity to acquire needed resources of knowledge, skills and experience under the guidance of an experienced mentor (Hite et al., 2005). While standards for preparing educational leaders may vary from state to state, most educational leadership preparation programs require a substantial internship consisting of at least 450 hours of field-based work in authentic school settings. Jackson and Kelley (2002) found that the very best leadership preparation programs consisted of internships with duration of more than 600 hours spaced over an entire year. Milstein and Krueger (1997) suggested the importance of at least six program components: sufficient time on task, placement, training, multiple and alternative internship experiences, reflective seminars, field supervision, and program coordination.

While internships are among the most highly valued experiences in leadership preparation programs, the internship can be one of the most challenging features to deliver effectively (Orr, 2011). One aspect of this difficulty may be a lack of understanding regarding the nature of the mentoring relationship itself and what factors may influence variation in these

relationships, such as variation in relational embeddedness. This variation may, in turn, affect outcomes that are crucial in the acquisition of critical resources needed for successful school leadership. The purpose of this study is to inform the understanding of the nature of mentoring relationships between prospective educational leaders and their mentor principals and how internal and external factors may be related to variation in these critical relationships, specifically in terms of relational embeddedness.

Internal factors. Internal factors of mentoring relationships, including demographic characteristics, personality and/or competencies, may be related to the relational embeddedness between prospective educational leaders and their mentor principals. Similarity, or homophily, in actor characteristics may affect the type and degree of relational embeddedness developed and the quality of the mentoring relationship. Early studies of mentoring relationships suggested that gender compositions represented a central feature of relationship quality. For example, female mentors may provide more psychosocial benefits for both male and female protégés (Noe, 1988) while a male mentor paired with either a male or female protégé may provide more challenging assignments that enhance organizational exposure and improved career benefits (Turban & Lee, 2007). Recent literature, however, suggests that gender similarity is not the only or even the most important factor that may influence the mentoring relationship. For example, similarity with regard to values and goals may have a moderating effect with greater impact than gender similarity (Eby et al., 2013).

The personality and competencies of the actors in the mentoring relationship may also be related to the type and degree of relational embeddedness developed. Both the literature on mentoring relationships and social network theory support the effects of personality and competencies on the quality of mentoring relationships and, thus, potentially on relevant

mentoring outcomes (Allen et al., 2006; Fletcher et al. 2007; Granovetter, 1973, 1992; Turban et al., 2007; Wanberg et al. 2006; Uzzi, 1996). For example, internal factors of the personality characteristics of both the prospective educational leaders and the mentor principal include their willingness, trustworthiness, and the ability to listen and give appropriate feedback (Clutterbuck, 2005). Internal factors can also include the mentor principal's level of emotional maturity and, education or expertise (Boyatzis, 2007; Cherniss, 2007; Hite, 2008; Orland-Barak & Hasin, 2010). Another internal factor that may affect relationship quality is the level of support, encouragement and on-going training given by the mentor to the prospective educational leaders (Allen et al., 2006; Alsbury & Hackmann, 2006; Browne-Ferrigno, 2004; Crow, 2012; Davis et al., 2005; Turban et al., 2007). Similarly, the personality factors of prospective educational leaders such as initiative, pro-activity, and help-seeking behavior are also suggested to affect the quality of the mentoring relationship (Engstrom, 2004; Higgins & Kram, 2001; Wanberg et al., 2006).

External factors. The literature on mentoring relationships and social network theory also suggest a variety of factors external to the mentoring tie, which can influence mentoring relationships. One critical external factor is the design of the structure of formal mentoring arrangements in educational leadership preparation programs, which creates the context in which the mentoring relationship is embedded (Boyatzis, 2007; Browne-Ferrigno & Muth, 2004; Crow, 2012; Davis et al., 2005). For example, Daresh (2004) found that the duration of the internship was a crucial factor in building relationships given that the development of mentoring relationships takes time. Thus, the length of the internship, or the duration of the time the mentoring partners are associated, may be a critical factor in the development of mentoring relationships, in terms of relational embeddedness, since time constraints can limit the

development of the mentoring relationships. Daresh (2004) and Fletcher and Ragins (2007) further noted, however, that the available time must be focused on high-quality activities that promote the growth and development of the protégé rather than those focused on activities, which are marginal.

Given that the design of the formal internship structure affects the environment in which mentoring relationships form during internship experiences, this study focuses on the designs of three different formal internship structures—each with varying amounts of duration and frequency of interaction between the prospective educational leaders and their mentor principals. The structural features of these internship designs stand to affect the nature and quality of the mentoring relationship, particularly in terms of the relational embeddedness that may be developed.

A second external factor that may affect the mentoring relationship is the context (i.e., district and school level) where the internship takes place. For example, the elementary school setting may provide for a calmer setting than a high school while the high school context may provide a greater range of experiences. Thus, the contextual variation in internships may be related to the quality of the mentoring relationship, specifically in terms of the relational embeddedness that may develop between prospective educational leaders and their mentor principal(s).

A third external factor that may be related to the quality of the mentoring relationships is the extent of previous history between the prospective educational leaders and their mentor principals. Compared to prospective educational leaders and mentor principals that have no previous history, a previous work or personal relationship may be related to the nature of the relational embeddedness within the current mentoring relationship. In addition, if they have a

current work relationship at the internship school site, they may have a head-start in terms of the frequency and duration needed for the development of relational embeddedness. Similarly, knowing or having heard of each other based upon reputation can also affect the relational embeddedness within their mentoring tie.

Summary

The relational embeddedness developed in the mentoring relationships between prospective educational leaders and their mentor principals matter. Relational embeddedness—the type and degree to which partners form ties embedded within a social relationship—may be a key indicator of quality in mentoring relationships, which in turn may affect outcomes. Outcomes such as the level of trust that is established between prospective education leaders and their mentor principals, the amount of information and other resources that are exchanged, and the degree to which prospective educational leaders have the tools necessary to take on the complex roles required to successfully lead schools toward student achievement may all be affected by relational embeddedness (Hite & Matthews, 2005).

Educational leaders are central to improving teaching and learning. In today's climate of heightened expectations and escalating demands for accountability, educational leaders must receive the professional preparation they need in order to address these demands. Readiness to assume effective educational leadership preparation appears to be linked to the mentoring relationships in which prospective educational leaders have opportunities to engage in authentic leadership activities with experienced mentors (Browne-Ferrigno & Muth, 2004; Daresh, 2004).

However, not all mentoring relationships in leadership preparation programs are alike. This study recognizes that variation may exist within these mentoring relationships or dyadic network ties. Without a better understanding of the nature and variation of relational

embeddedness that may exist within mentoring relationships, the training of prospective education leaders and the design of internship structures that may facilitate effective leadership outcomes may be significantly inhibited.

Thus, to better understand the nature of mentoring ties in the context of educational leadership preparation programs and to lay the groundwork for better understanding how relational embeddedness may be related to outcomes in education preparation programs, this study will utilize the theoretical frameworks of mentoring and social network theory to examine the nature of the mentoring relationship. This study will also discuss internal factors of demographic characteristics, personality and/or competencies, as well as external factors of the design of the internship structure and the context in which the mentoring relationship is embedded and how they may be related to the quality of the mentoring relationship in terms of the variation in relational embeddedness.

This literature review has highlighted a profession under stress. The roles and responsibilities of school leaders have multiplied in an era of increased accountability, yet the needs of our children have never been greater. To accomplish the difficult tasks and responsibilities that may positively influence student achievement, prospective educational leaders need the support of mentor principals who have successfully navigated this complex terrain. It may be within relationally-embedded mentoring ties that prospective education leaders can best access the critical resources of knowledge, skills and experience which can enable them to become caring leaders who can make a difference in schools. When administrators of educational leadership preparation programs understand the potential variation of relational embeddedness within the mentoring ties, along with the internal and external factors that may be related to this relational embeddedness, they can be better informed to improve the

potential quality and the relational embeddedness of these critical, developmental mentoring relationships. They may also be enabled to design internship experiences that will maximize benefits and increase resource acquisition that prospective leaders need to become effective school leaders.

APPENDIX B: DETAILED METHODS

This research utilized social network theory and quantitative methods to examine the nature of mentoring relationship quality, in terms of the relational embeddedness, between prospective K-12 educational leaders and their mentor principals during internship experiences in a university-based educational leadership preparation program. This study specifically examined how internal factors of demographic characteristics, personality and/or the competencies of the actors in the mentoring relationship as well as external factors of the design of the internship structure and the context of the internship were related to the type and degree of relational embeddedness within the dyadic ties. This study also prepared the groundwork for future research to examine how relational embeddedness in these mentoring relationships may be related to mentoring outcomes.

The case under study was a principal preparation program at a western university in partnership with local school districts that offers three different designs of internship structures to prepare prospective education leaders. The program has been preparing educational leaders for 27 years and generally accepts 20-25 candidates each year. Candidates complete the program within either a full-time or part-time program track. In both tracks, students are required to complete 450 hours of administrative internship as required for state licensure. The design of the internship structure depends upon the full-time or part-time program track. In the full-time program track, students are not working and are able to choose to complete additional internship hours. The program's internship supervisors with the approval of the participating school districts brokered internship locations. Prospective educational leaders, as administrative interns, experience multiple internship experiences in a variety of school levels (elementary, middle, junior and senior high schools). For each internship, the principal of the school functions as the

intern's mentor principal. The mentor principals receive university guidance and training. After the successful completion of the program, students are awarded a Master's of Education degree (M.Ed.) and can be recommended for administrative licensure by the state. In the study period, 91% of the graduates pursued and received administrative licensure. Since 2000, 85% of graduates who pursued and received licensure were placed in administrative positions.

Sample

The population for this study was currently licensed teachers who had been enrolled as students in principal preparation programs. The purposive sample for this study included the census of students who enrolled in the principal preparation program at a western university between 2010 and 2014 (n=118). Students in this sample ranged in age from 25-55 years old and had a minimum of three years of teaching experience. Each of these students had different internship mentor principals. Therefore, this study initially examined approximately 242 dyadic mentoring ties.

Mentoring relationships in each of three different designs of internship structures were represented (see Table A-3). The first type of administrative internship structure is the *Extensive Internship*, (LPP) in which prospective educational leaders participate as intern assistant principals for four days a week for 12 weeks. These interns generally completed three *Extensive Internship* experiences, each at different schools and at three different levels of schooling (i.e., elementary, junior high or middle school and high school).

The study sample included 49 participants in this Extensive Internship structure, each having three different *Extensive Internship* mentor principals providing a total of 147 mentoring ties. The second type of administrative internship structure was *the Resident School Internship*,

Table A-3

Number of Expected Dyadic Ties based on Enrollment Years and Design of Internship Structures

Enrollment Year	Number of Students Completing Three Extensive Internships	Number of Students completing One Resident School Internship	Number of Students Completing Two Lab School Internships*	Total Number of Students per Enrollment Year
2010	12	14	14	26
2011	9	14	15	23
2012	9	16	16	25
2013	6	11	11	17
2014	13	14	15	27
Total students per internship structure	49	69	71	118
Total expected dyadic ties**	147	69	142	358

*While Lab School Internships can range between two and four internship experiences, these estimates are based on two. If students have done more Lab School Internships, these additional internships will also be included in the study. The interns in the Resident School Internship also complete a Lab School Internship and are, thus, included in both columns.

(ExSL) in which prospective educational leaders completed an administrative internship experience at the school in which they were currently teaching.

The *Resident School Internship* structure is part-time, in addition to their full-time teaching, and provided a mentor principal with whom the intern is very familiar and with whom they have frequent contact in the school where they currently taught. The sample included 69 participants in this internship structure; each having one Resident School mentor principal, providing 69 mentoring ties. And the third internship structure, the *Lab School Internship*, (ExSL) was also a part-time internship in which prospective educational leaders were assigned as interns in a different school and at a different level than where they were currently teaching. The *Lab School Internship* structure provided a mentor principal with whom the participant was

usually unfamiliar, with whom there had usually been no extensive prior relationship, and with whom there was less frequent contact than the other two internship structures. The sample included 71 participants each having two Lab School mentor principals to provide 142 mentoring ties. Thus, the total sample included 118 participants and a total of 358 possible mentoring ties.

Data Collection

Data was gathered regarding the nature of relational embeddedness between prospective education leaders and their mentor principals and the internal and external factors that may be related to relational embeddedness in these dyadic ties. The following research questions guided this study:

1. What is the nature of relational embeddedness in the mentoring relationships between prospective educational leaders and their mentor principals in leadership preparation programs?
2. How do internal factors of demographic characteristics, personality, and/or competencies relate to the relational embeddedness between prospective educational leaders and their mentor principals?
3. How do external factors of the design of the internship structure and/or the context of the internship relate to the relational embeddedness between prospective educational leaders and their mentor principals?

In order to address these research questions, this study collected quantitative data. Using an online survey, created using Qualtrics software, prospective educational leaders as participants had the ability to fill out the survey at their own pace making quantitative research an ideal method to gather a large amount of data. Survey items set parameters for participants to work through where the data collected was analyzed to determine statistical significant

associations among the variables. In this way, the data was collected to address the three research questions. The following five sections appeared in the survey: (a) Introduction; (b) Actor Demographics/ Alter Actor Demographics; (c) TRENDS Survey items; (d) Items on internal and external factors that may be related to Relational Embeddedness; and (e) Future research questions and conclusion.

The first part of the survey introduced the basic purpose of the research, which was to gather data that may inform administrators of educational leadership preparation programs about the nature of relational embeddedness in mentoring relationships formed during internship experiences. Information for informed consent appeared on the first page of the survey followed by specific directions and an overview of the survey. This first section also assured participants of the confidentiality that at no time during the analysis or reporting of the findings would their names be identified or associated with the data they provide.

The second section of the survey asked participants for their own primary demographics (gender and age). Participants were requested to name their mentor principal(s) and provided demographics for their mentors, including gender, comparative age, and educational level of their mentor principal (if they know it). Participants also identified the design of their internship structure among the three choices offered in their education leadership preparation program. Participants also identified aspects of the context of the internship including the level of school (i.e., elementary; middle school; junior or senior high school) and the location or district of each internship experience in this section of the survey. Each of these questions was analyzed at the nominal/categorical level—some with bi-nominal variables (i.e., gender or education level of the mentor) and some with multiple nominal levels (i.e., school district 1-8 choices).

The third section of the survey asked the participants to answer the 16 TRENDS survey items (see Appendix C) to gather data on the type and degree of relational embeddedness in the mentoring dyadic ties previously identified. Based on Hite's (2003) typology of relational embeddedness, the Typology of Relational Embeddedness Network Data Survey (TRENDS) (Hite et al., 2011) is an instrument that identified the multiple dimensions of relationally embedded ties and categorizes these ties into type and degree of relational embeddedness. The TRENDS survey instrument identified relationally embedded ties based on three social components—personal relationship, dyadic interaction, and social capital—and place each dyadic tie in one of seven types (plus not embedded) and one of three degrees (i.e., uni-dimensional, bi-dimensional, or fully embedded).

All questions regarding type and degree of relational embeddedness were gathered at the ordinal level of measurement utilizing the TRENDS survey instrument. These questions were formulated on a four-point Likert scale which required the participant to identify the extent to which a series of statements describes their mentoring relationship, using the following 4-point scale: (a) not descriptive; (b) somewhat descriptive; (c) moderately descriptive; and (d) very descriptive. A four-point scale was specifically chosen for these items rather than a traditional five-point scale to avoid a middle choice and to allow the participants to make a definite choice either of more or less descriptive. Table A-4 below identifies each of the three social components of relational embeddedness—personal relationship, dyadic interaction, and social capital—along with their sub-constructs and 16 related survey items.

The fourth section of the survey gathered data regarding internal factors of personality and/or competencies which may be related to the type and degree of relational embeddedness in dyadic ties as well as external factors in the design of the internship structure and various

Table A-4

Social Components, Attributes, Elements and TRENDS Instrument Items

Social Component	Attribute	Element	TRENDS Instrument Items
Personal relationship	Personal knowledge	Knows personally	I know this person very well.
	Affect	Friendship	This person is a good friend.
	Sociality	Knows tie's life and family	We talk about our lives and our families.
	Value of personal relationship	Value of personal relationship	Maintaining our personal relationship is important to me.
Dyadic interaction	Extent	Frequency	I interact with this person frequently.
		Duration	I have interacted for a long time with this person for work purposes.
	Effort	Problem solving	This person tries to help me when I have a work-related problem.
	Education	Learning	I learn from my interactions with this person.
	Ease	Goal Congruence Communication quality Working well together	This person and I have similar work-related goals. Our interaction is characterized by high-quality communication. This person works well with me.
Value of dyadic interaction	Valuable interaction	Maintaining our work-related relationship is important to me.	
Social Capital	Obligations	Norms of reciprocity	I expect this person will return my favors.
	Value of social capital	Value of reciprocity	Our willingness to do favors for each other is an important aspect of our relationship for me.
	Resource accessibility	Resource accessibility	I can access resources from this person if he or she has something I need.
	Brokering	Introductions to third party	I can ask this person to introduce me to someone he or she knows.

Hite et al., (2011)

contextual factors that may be present in the environment in which the dyadic tie is embedded. Since the first internal factor of demographic characteristics addressed in the research question, internal factors in this section included the sub-variables of personality and competencies of the mentor principals and the prospective educational leaders. Specific personality attributes were included in the survey items regarding: mentor willingness to listen and to be available to the prospective educational leader; mentor trustworthiness; and the level of the quality of the feedback received by the prospective educational leader in terms of honesty and timeliness. Data on the competencies of the mentor principals regarding their ability to facilitate the goals of the prospective educational leaders was also gathered. The educational level of the mentor principal was gathered previously in the demographic section of the survey. Another internal factor gathered in this section regarded the initiative of the prospective educational leader. The literature on mentoring states that the initiative of the mentee, in terms of pro-activity and help-seeking behavior, is positively related to the quality in the mentoring relationship. Thus, sub-variables of mentee initiative including taking responsibility for self-learning, pro-activity, and asking for help was gathered on a four-point Likert scale using the same markers of description.

In addition to internal factors, this fourth section addressed external factors, which may be related to relational embeddedness. Since the specific design of the internship structure will have been named in the first section, various factors of the duration and/or frequency of contact between the actors in the mentoring relationship will also be identified. The history of the relationship will also be gathered as contextual data at the nominal level in this fourth section. A mentoring relationship that has pre-existing ties or longer-standing association perhaps outside the school setting may influence relational embeddedness. The literature on mentoring relationships and social network theory state that duration and frequency of contact are factors in

relational embeddedness and in the quality of the mentoring relationship. Thus, the design of the internship structure and contextual factors such as relationship history may both affect outcomes.

Additional external factors and the sub-variable of context included whether the duties assigned to the intern have been challenging and inclusive of all the duties of an effective educational leader and whether an appropriate level of support was given to fulfill those responsibilities. Like all of the ordinal questions in this survey, this data was gathered on a four-point Likert scale to assess how descriptive the statement may appear to the prospective educational leaders (see Table A-4).

The final section of the survey asked a future question of interest regarding perceptions of learning and confidence gained by the prospective educational leader as a result of being in a mentoring relationship with their mentor principals. Both of these factors—learning and confidence—have been cited in the literature on mentoring and social network theory as outcomes of high-quality mentoring relationships and relationally embedded dyadic ties. The conceptual model of the potential relationship between the independent variables of internal and external factors and the mentoring relationship, and the mentoring relationships association with mentoring quality is shown in Figure A-2.

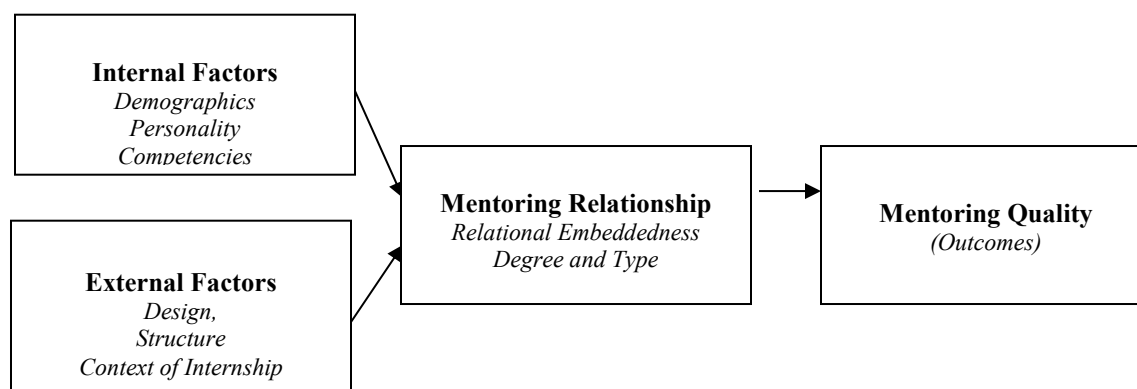


Figure A-2. Internal and external factors, mentoring relationship and mentoring quality

While the scope of the study did not explicitly include the relationship between mentoring quality and mentoring outcomes, this pilot survey item was intended to provide a simple, initial gauge of mentoring outcomes to support a brief exploratory examination of this relationship. This last section of the survey thanked the participants for their time in filling out the survey, assured confidentiality, and gave the contact information of the principle researcher in the case of further questions.

Data Analysis

In Excel, the data was cleaned and sorted. Cleaning the data implies that the names of participants and any other identifying information was replaced with numbers to maintain the confidentiality of the participants. The data was then converted in Excel into tie and attribute lists. The tie lists indicated types and degrees of relational embeddedness for each mentor relationship dyadic tie and will show numbers representing the types of relational embeddedness as a number from one to eight (see Table A-5 for textual key). The degree of relational embeddedness was then shown numerically from zero to three (see Table A-6 for textual key).

The goal of the statistical analysis process was to match the appropriate statistical technique to the type of research question being asked (Rockinson-Szapkiw, 2014; Rocky Mountain University, 2014). Therefore, the type of research questions being asked—level of measurement—was identified and the data tested for assumptions of a normal distribution. The following step by step process for data analysis was utilized: (a) Identify the type of research question being asked; (b) Identify the type and number of variables for analyses; and (c) Identify the type of data expected and determine whether it meets assumptions of a normal distribution (Rockinson-Szapkiw, 2014; Rocky Mountain University, 2014). After answering each of these questions, various statistical techniques—both parametric if the data met assumptions for a

Table A-5

Textual Key for Type of Relational Embeddedness

Number	Type
1	Not Embedded
2	Competency
3	Personal
4	Hollow
5	Functional
6	Isolated
7	Latent
8	Full

Table A-6

Textual Key for Degree of Relational Embeddedness

Number	Type
0	Not Embedded
1	Uni-Dimensional
2	Bi-Dimensional
3	Fully Embedded

normal distribution or non-parametric is it did not—was selected to analyze the data to determine if there is a statistically significant relationship between the variables.

The first step in the analysis process was to determine the type of research question being asked. This research design posed three questions. The first research question was a descriptive question to better understand the nature of relational embeddedness between educational leaders and their mentor principals: (i.e., *What is the nature of relational embeddedness in the mentoring relationships between prospective educational leaders and their mentor principals in leadership preparation programs?*) For this particular research question, there were no comparisons or relationships between variables. Thus, the statistical techniques for description only (i.e., frequency, mean, and standard deviations) included basic statistics of each of the dyadic ties to determine the type and degree of relational embeddedness. This was done on Minitab by

entering the data into the Minitab worksheet, selecting *stat* from the ribbon, choosing basic statistics and then descriptive statistics from the drop-down menu and selecting the statistical procedures including the frequency, mean, and standard deviations for each of the dyadic ties will then be mathematically calculated.

The second and third research questions asked how the independent variables of internal and/or external factors may be related to the relational embeddedness between prospective educational leaders and their mentor principals in the dyadic ties. Research questions two and three are relationship or correlation-type questions. This research design did not call for a cause and effect relationship or a predictive relationship. Rather, the purpose of this initial research was to statistically establish if a relationship exists between internal or external factors and the type and degree of relational embeddedness. To determine a possible relationship, statistical techniques were used to test for a significant relationship between the variables. Statistical techniques were also used to assess how independent variables may relate to one another.

The second step in the analysis process called for the identification of the type and number of variables to be analyzed. This research was designed with two independent variables of internal factors and external factors. The dependent variable was the mentoring relationship with the sub-variables of relational embeddedness type and degree. Each of the sub-variables for the independent and dependent variables had been assigned operational definitions. The data collection plan identified each variable, operationally defined its sub-variables, stated the level of measurement, range of responses and offered a codebook describing the meaning of numbers assigned in place of textually gathered data.

Step three in the data analysis process identified the nature (i.e., level of measurement) of the independent and dependent variables. The level of measurement (nominal, ordinal,

interval/ratio levels—as well as the measurement of variables as categorical or continuous) was determined in order to select the appropriate statistical technique. Examples of nominal data in this research are questions regarding the gender of prospective educational leaders and their mentor principals, age comparison, education level of the mentor principal, school level and school district location in which the internships have taken place. Each of these categories was nominal and categorical.

The next level of measurement is the ordinal level. Ordinal data allows for ranking responses. For example, the majority of questions in the data gathering process are asked on the ordinal level of measurement. A four-point Likert scale was offered consisting of the following levels of descriptiveness: (a) not descriptive; (b) somewhat descriptive; (c) moderately descriptive; and (d) very descriptive. A four-point scale was chosen rather than a five-point scale so that the responses will represent either a positive or negative choice regarding the level of description. Once the type and degree of relational embeddedness have been descriptively analyzed, they are assigned a number (see Table A-6 for key relational embeddedness type). The type of relational embeddedness will always be numerical and categorical. The degree of relational embeddedness is on the interval/ratio level of measurement and will always be continuous. Since relational embeddedness is based upon a high degree threshold of the social components in Hite's (2003) typology, the numeric threshold was based upon being above one standard deviation (1SD) above the raw mean item score (4-point scale). Thus, the calculated degree of relational embeddedness for each dyadic tie was interval/ratio and continuous data (see Table A-7 for key).

Another aspect of identifying the nature of independent and dependent variables in this step of analysis was to check for assumptions of a normal distribution. Two assumptions must

Table A-7

Design of Internship Structures/Gender with Relational Embeddedness Type

	LPP Internship Structure	Resident School Internship	Lab School Internship
Relational Embeddedness Type—Male			
Relational Embeddedness Type—Female			

be met which specify that the data will likely be normally distributed along a bell curve: (1) there are an adequate sample size appropriate range of scores; and (2) there are few unusual data points. For this study the large sample size of possible dyadic ties met the tests for assumptions of a normal distribution. In this stage of data analysis, it was helpful to draw a diagram of what the research analysis may look like (Rockinson-Szapkiw, 2014; Rocky Mountain University, 2014).

In addition to an overall conceptual model (Figure A-2), matrix charts of a possible relationship between sub-variables of independent and the dependent variables were helpful for statistical analysis. Independent variable(s) were placed in columns and the dependent variable(s) in the rows of the matrix. For example, one of the sub-questions to be addressed in Research Question #2 (i.e., *How do internal factors of demographic characteristics, personality, and/or competencies relate to the relational embeddedness between prospective educational leaders and their mentor principals?*) is how the gender of the prospective educational leader and their mentor principal(s) may be related to the type or degree of relational embeddedness.

To draw a matrix of what this analysis may look like using type only as the dependent variable, the independent variables of gender (nominal/categorical) with two levels (male and

female) will go in the columns at with the type of relational embeddedness (nominal/categorical in the rows).

To address the sub-variable of gender in the question illustrated above the following procedures were used to test for a statistical significance or relationship between the independent and dependent variables. The appropriate statistical technique to test for a comparison of two nominal/categorical levels of measurement is the Chi-square test. Because the dyadic ties are made up of several possible variations (i.e., female prospective educational leader with female mentor principal; male with male mentor or a mixed pair) a Chi-square test was applied for each of these possible combinations of prospective educational leaders and mentor principals.

A similar test was run using the same independent variables of gender with two levels and the dependent variable of relational embeddedness degree, which is interval/ratio level of measurement and continuous. For this statistical test of a nominal level of measurement in gender and the interval/ratio level of relational embeddedness degree the appropriate statistical test is the chi-square test. Minitab mathematically calculated the results and gave a p-value that either confirmed or rejected the null hypothesis that there is no significant relationship between the variables. If the p-value was low (below .05) the null hypothesis was rejected that there is no statistical significance between the variables. If, on the other hand the p-value was above .05, the alternative hypothesis was accepted that there is a statically significant relationship between the variables. Sub-research questions for internal factors on an ordinal level of measurement included data regarding the personality and competencies of both the mentor principals and the prospective educational leaders (i.e. their initiative, pro-activity and help-seeking behavior).

The literature in both mentoring and social network theory cited that certain personality attributes of one or both partners in a dyadic tie contribute to the quality in a mentoring

relationship. For example, personality attributes of the mentor principal include willingness, trustworthiness; and giving feedback and the initiative, pro-activity or help-seeking behavior of the prospective educational leaders may all relate to relationship quality and the relational embeddedness type or degree in the mentoring relationships of the participants in this study. Each of these sub-independent variables is addressed in the second research question and will be statistically tested for a relationship with both type and degree of relational embeddedness.

A very similar statistical process was utilized to address research question number three: (i.e., *how do external factors of the design of the internship structure and/or the context of the internship relate to the relational embeddedness between prospective educational leaders and their mentor principals?*). External factors included the design of the internship structure as well as contextual features found in the external environment in which the dyadic tie is embedded. The design of the internship structure (i.e., one of three possible internship choices at this particular university) will have been collected in the second section of the survey under *actor demographics*. With the identification of one of three designs of internship structures, variations of the frequency and duration of contact between the actors in the dyadic tie were identified. Such variations of frequency and duration had been cited in the literature on mentoring and social network theory as factors, which may influence mentoring relationship quality and relational embeddedness.

To address the sub-research question regarding the design of the internship structure and gender with a possible relationship with the type of relational embeddedness the following statistical techniques were used. The design of the internship structure, gender (on two levels) and the type of relational embeddedness were all nominal/categorical data. With the comparison of three designs of the internship structure and relational embeddedness type with gender on two

levels, the appropriate statistical test is the chi-square to determine a possible significant statistical relationship between the variables. To draw a matrix of this type of analysis, the designs of the internship structures are placed in the three columns as the independent variables with the type of relational embeddedness and gender placed in the rows (Table A-7).

Research question three also required a statistical test for a relationship between contextual features of the internship, which included the duties assigned to the prospective educational leaders and the support offered by the mentor principals. Variables are assigned into the proper columns and rows and specific statistical data, including p-value and confidence intervals, are requested. Minitab statistically calculated and display the data requested.

The final question on the survey had to do with a possible relationship between the mentoring relationship (i.e., sub-variables of type and degree of relational embeddedness— independent variable) and the relationship quality (dependent variable). While this question has more to do with future research, the sub-question in this research is *whether the learning provided or the confidence gained by the prospective educational leaders—two cited outcomes of high-quality mentoring relationships is related to the type or degree of relational embeddedness in the dyadic tie*. In order to address the possibility that there is a relationship, and to lay the groundwork for future research, this final question used quantitative statistical techniques of chi square to test for associations.

Once the statistics or graphs appeared in the Minitab worksheet, the data was then interpreted and the findings reported. Findings were organized in the final paper to address each of the research questions. While not generalizable to a larger population, the findings and recommendations given may inform administrators of similar educational leadership preparation programs in their efforts to design internship structures that facilitate the development of

relational embeddedness which may better prepare effective educational leaders. In addition to addressing the three research questions and furthering the research on the nature of relational embeddedness type and degree and its possible relationship with internal and external factors, this research investigated a possible relationship with relational embeddedness and relationship quality. Given that the development of relational embeddedness over time may influence mentoring relationship quality in terms of the learning and the confidence gained by the prospective educational leader—to outcomes cited in the literature on mentoring relationships in educational leadership preparation programs. This question will be used to springboard future research related to the type and degree of relational embeddedness and outcomes in the mentoring relationships between prospective educational leaders and their mentor principals. Critical outcomes necessary for effective school leadership may include acquiring the resources such as the knowledge, skills and experience needed to sustain dynamic change, the learning needed by effective school leaders to lead others and the experience and confidence needed to persist in this era of increasing demands and accountability.

Limitations. A few limitations of this study should be noted. First, a self-report questionnaire by the prospective educational leaders regarding the mentoring relationships with their mentor principals was the single source of data collection. Future studies should gather data from the mentor principals as well as the prospective educational leaders to collect a more balanced view of the mentoring relationships.

Second, the sample for this case study was purposive consisting of students enrolled in one western university preparation program between 2010 and 2014. The limitations resulting from a non-random sample will limit generalizations to the population of all prospective educational leaders. While variations of internal factors of demographic characteristics,

personality and/or competences of both the prospective educational leaders and mentor principals may be similar in other educational leadership preparation programs, the researcher makes no claim that these results can be generalized to any other setting.

External factors of the design of the internship structures as well as the contextual features in the environment in which the dyadic tie is embedded also contain a variety of elements. Each of these factors may or may not influence the relational embeddedness in the mentoring relationships between prospective educational leaders and their mentor principals at this university. Thus, the researcher makes no claims of prediction or causality between the independent variables of internal or external factors and the dependent variable of type or degree of relational embeddedness in this or any other setting.

Despite these limitations, this study represents an initial exploration of the nature of relational embeddedness between prospective educational leaders and their mentor principals and offers a review of internal and external factors cited in the literature as possibly influencing mentoring relationship quality. Statistically sound techniques were applied to test how these factors may be related to the type and degree of relational embeddedness within the dyadic ties. Findings may inform administrators of educational leadership preparations programs as they design internship structures to prepare effective school leaders. This research can be useful as a baseline for future educational leadership research, which will likely include an exploration of the outcomes in mentoring relationships associated with relational embeddedness and relationship quality and outcomes.

Confidentiality. The strictest standards of confidentiality will be adhered to during each stage of data collection, analysis, and reporting of the findings. Prospective educational leaders were assured of confidentiality in a letter inviting them to participate in the online survey via

Qualtrics. Additionally, the first section of the survey assured participants that their confidentiality was respected. After the data had been collected, each participant's name was assigned an identification number. At no other time in the process of data reporting were mentor principal(s) identified.

APPENDIX C: TRENDS SURVEY ITEMS

TRENDS Instrument Items for Research Question #1

(Hite, et al., 2011)

I know this person very well.
 This person is a good friend.
 We talk about our lives and our families.
 Maintaining our personal relationship is important to me.

I interact with this person frequently.
 I have interacted for a long time with this person for work purposes.
 This person tries to help me when I have a work-related problem.
 I learn from my interactions with this person.
 This person and I have similar work-related goals.
 Our interaction is characterized by high-quality communication.
 This person works well with me.
 Maintaining our work-related relationship is important to me.

I expect this person will return my favors.
 Our willingness to do favors for each other is an important aspect of our relationship for me.
 I can access resources from this person if he or she has something I need.
 I can ask this person to introduce me to someone he or she knows.

Survey Items for Research Question #2

This person listens to me when I have a work-related problem.
 This person makes time for me.
 This person follows through with what they say they will do.
 This person gives honest feedback.
 This person gives timely feedback.
 In this mentoring relationship, I take responsibility for my own learning.
 In this relationship, I offer my own ideas.
 In this relationship, I ask for help when I need it.
 This person helps me to identify my goals.
 This person helps me to achieve my goals.
 This person assigns meaningful tasks pertinent to school leadership.
 This person offers on-going training in my responsibilities.

Survey Items for Research Question #3

I have worked with this person in the past.
 I know this person from a previous non-work setting.
 I know this person by their reputation.
 I did not know this person at all previous to the internship.

Survey Items for Future Research

In this mentoring relationship, I learned tricks of the trade of an effective educational leader.
 In this mentoring relationship, I gained the confidence to be an effective educational leader.

REFERENCES

- Allen, T. D. (2007). Mentoring relationships from the perspective of the mentor. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Allen, T. D., Eby, L. T., O'Brien, K. E., & Lentz, E. (2008). The state of mentoring research: A qualitative review of current research methods. *Journal of Vocational Behavior*, 73(3), 343-357.
- Allen, T. D., Lentz, E., & Eby, L. T. (2006). Mentorship behaviors and mentorship quality associated with formal mentoring programs: Closing the gap between research and practice. *Journal of Applied Psychology*, 91(3), 567-578.
- Alsbury, T. L., & Hackmann, D. G. (2006). Learning from experience: Initial findings of a mentoring/induction program for novice principals and superintendents. *Planning and Changing*, 37(4), 169-189.
- Baugh, S. G., & Fagenson-Eland, E. A. (2007). Formal mentoring programs: A "poor cousin" to informal relationships? In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Boyatzis, R. E. (2007). Mentoring for intentional behavioral change. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Browne-Ferrigno, T. (2003). Becoming a principal: Role conception, initial socialization, role-identity transformation, purposeful engagement. *Educational Administration Quarterly*, 39(4), 468.

- Browne-Ferrigno, T., & Muth, R. (2004). Leadership mentoring in clinical practice: Role socialization, professional development, and capacity building. *Educational Administration Quarterly*, 40(4), 468-494.
- Catano, N., & Stronge, J. H. (2006). What are principals expected to do? Congruence between principal evaluation and performance standard. *NASSP Bulletin*, 90(3), 221-237.
- Chandler, D. E., & Kram, K. E. (2005). Applying an adult development perspective to developmental networks. *Career Development International*, 10(6/7), 548-566.
- Chang, K. (2011). The companies we keep: Effects of relational embeddedness on organizational performance. *Sociological Forum*, 26(3), 527-555.
- Chao, Georgia T. (2007). Mentoring and Organizational Socialization: Networks for work adjustment. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Chau, R. Y. J., Ingram, P., & Morris, M. W. (2008). From the head and the heart: Locating cognition and affect-based trust in managers' professional networks. *Academy of Management Journal*, 51(3), 436-452.
- Cherniss, C. (2007). The role of emotional intelligence in the mentoring process. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Clutterbuck, D. (2004a). Mentor competences: A field perspective. In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 42-56). Burlington, VT: Gower Publishing Limited.

- Clutterbuck, D. (2004b). What about mentee competences? In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 72-82). Burlington, VT: Gower Publishing Limited.
- Clutterbuck, D. (2005). Establishing and maintaining mentoring relationships: An overview of mentor and mentee competencies. *Journal of Human Resource Management*, 3(3), 2-9.
- Crow, G. M. (2012). School leader preparation: A short review of the knowledge base. Retrieved 7.13.2013. doi: <http://dera.ioe.ac.uk/id/eprint/5127>
- Cunningham, W. G., & Sherman, W. H. (2008). Effective internships: Building bridges between theory and practice. *The Educational Forum*, 72(4), 308-18.
- Daresh, J. C. (2004). Mentoring school leaders: Professional promise or predictable problems. *Educational Administration Quarterly*, 40(4), 495-517.
- Darwin, A. (2004). Characteristics ascribed to mentors by their protégés. In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 42-56). Burlington, VT: Gower Publishing Limited.
- Davis, S., Darling-Hammond, L. LaPoint & Meyerson, D. (2005). *School leadership study: Developing successful principals*. The Wallace Foundation. Stanford Educational Leadership Institute. doi: <https://edpolicy.stanford.edu/publications/products/949>
- Dawley, D. D., Andrews, M. C., & Bucklew, N. S. (2010). Enhancing the ties that bind: Mentoring as a moderator. *Career Development International*, 15(3), 259-278.
- DiPaola, M., & Tschannen-Moran, M. (2003). The principalship at a crossroads: A study of the conditions and concerns of principals. *NASSP Bulletin*, 87(634), 43-65. doi: <http://bul.sagepub.com/content/87/634/43.short>.

- Dobrow, S. R., Chandler, D. E., Murphy, W. M., & Kram, K. E. (2012). A review of developmental networks: Incorporating a mutuality perspective. *Journal of Management*, 38(1), 210-242.
- Dobrow, S. R., & Higgins, M. C. (2005). Developmental networks and professional identity: A longitudinal study. *Career Development International*, 10(6/7), 567-583.
- Dougherty, T. W., & Dreher, G. F. (2007). Mentoring and career outcomes: Conceptual and methodological issues in an emerging literature. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Eby, L. T. (2007). Understanding relational problems in mentoring: A review and proposed investment model. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Eby, L. T., Allen, T. D., Hoffman, B. J., Baranik, L. E., Sauer, J. B., Baldwin, S., ... & Evans, S. C. (2013). An interdisciplinary meta-analysis of the potential antecedents, correlates, and consequences of protégé perceptions of mentoring. *Psychological Bulletin*, 139(2), 441-446.
- Ehrich, L. C. (2008). Three P's for the mentoring of women educators: Purpose, power, propriety. *Journal of the Association of Women Educators*, 12(2), 31-36.
- Ehrich, L. C., Hansford, B., & Tennent, L. (2004). Formal mentoring programs in education and other professions: A review of the literature. *Educational Administration Quarterly*, 40(4), 518-540.

- Elmore, R. F. (2008). *School reform from the inside out: Policy, practice, and performance* (Fifth Printing). Cambridge, MA: Harvard Education Press.
- Engstrom, T. (2004). Variation in mentoring outcomes: an effect of personality factors? In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 42-56). Burlington, VT: Gower Publishing Limited.
- Fletcher, J. K., & Ragins, B. R. (2007). Stone center relational cultural theory: A window on relational mentoring. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Fullan, M. (2002). The change leader. *Educational Leadership*, 59(8) 16-31.
- Fullan, M. (2009). The principal and change. In M. Fullan (Ed.), *The challenge of change: Start school improvement now!* 2nd ed., (pp. 55-70). Thousand Oaks, CA: Corwin.
- Godshalk, V. M., & Sosik, J. J. (2007). Mentoring and leadership: standing at the crossroads of theory, research, and practice. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Granovetter, M. S. (1973). The strength of weak ties. *Journal of Sociology*, 78(6), 1360-1380.
- Granovetter, M. S. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, 1, 201-233. DOI:
<http://www.soc.ucsb.edu/faculty/friedkin/Syllabi/Soc148/Granovetter%201983.pdf>

- Granovetter, M. S. (1992). Problems of explanation in economic sociology. In N. Nohria, & R. Eccles (Eds.), *Networks and organizations*, (pp. 25-56). Boston, MA. Oxford University Press.
- Hansford, B., & Ehrich, L. C. (2006). The principalship: How significant is mentoring? *Journal of Educational Administration*, 44(1), 36-52.
- Higgins, M. C., & Kram, K. E. (2001). Reconceptualizing mentoring at work: A developmental network perspective. *Academy of Management Review*, 26(2), 264-288.
- Higgins, M.C., Chandler, D. E. & Kram, K.E. (2007). Developmental Initiation and Developmental Networks. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Hite, J. M. (2003). Patterns of multi-dimensionality among embedded network ties: A typology of relational embeddedness in emerging entrepreneurial firms. *Strategic Organization*, 1(1), 9-49.
- Hite, J. M. (2005). Evolutionary processes and paths of relationally embedded network ties in emerging entrepreneurial firms. *Entrepreneurship Theory and Practice*, 29(1), 113-144.
- Hite, J. M. (2008). The role of dyadic multi-dimensionality in the evolution of strategic network ties. In J. A. C. Baum, & T. J. Rowley (eds.), *Network strategy: Advances in strategic management*, (25), (pp. 133-170). Emerald Group Publishing Limited.
- Hite, J. M. (2011). Embeddedness. In G. A. Barnett (Ed.), *Encyclopedia of social networks* (pp. 252). Davis, CA. SAGE Publication, Inc.

- Hite, J. M., Wakkee, I., Hite, S. J., Sudweeks, R., & Walker, T. D. (2011). Validating TRENDS – the typology of relational embeddedness network data survey. Presentation, 31st Sunbelt International Social Network Conference, St. Petersburg, FL.
- Hite, J. M., & Matthews, L. J. (2005). Assessing impact of leadership preparation programs: An analysis of the effect of student cohorts and administrative internships on the development of candidates' administrative networks. *NCPEA Education Leadership Review*, 6(1), 15-26.
- Hite, J. M., Williams, E. J., & Baugh, S. B. (2005). Multiple networks of public school administrators: An analysis of network content and structure. *International Journal of Leadership in Education: Theory and Practice*, 8(2), 91-122.
- Huang, H., & Chang, C. (2008). Embedded ties and the acquisition of competitive advantage. *Journal of Intellectual Capital*, 9(1), 105-121.
- Interstate School Leaders Licensure Consortium (ISLLC) (2008). Educational Leadership Policy Standards: ISLLC. Adopted by the National Policy Board for Educational Administration 2007, Washington D.C. DOI: <http://www.danforth.uw.edu/pdfs/ISLLC.pdf>
- Jack, S. L. (2005). The role, use and activation of strong and weak network ties: A qualitative analysis. *Journal of Management Studies*, 42(6), 1233-1259.
- Jack, S. L., Dodd, S. D., & Anderson, A. R. (2004). Social structures and entrepreneurial networks: The strength of strong ties. *International Journal of Entrepreneurship and Innovation*, 5(2), 107-120.
- Jackson, B. L., & Kelley, C. (2002). Exceptional and innovative programs in educational leadership. *Educational Administration Quarterly*, 38(22), 192-212.

- Kram, K. E. (1983). Phases of the mentor relationship. *Academy of Management Journal*, 26(4), 608-625. doi. 10.2307/255910.
- Kram, K. E., & Isabella, L. A. (1985). Mentoring alternatives: The role of peer relationships in career development. *The Academy of Management Journal*, 28(1), 110-132.
- Lane, G. (2004). A quantitative view of mentor competence. In Clutterbuck D., & Lane G. (Eds.), *The situational mentor: An international review of competences and capabilities in mentoring* (pp. 42-56). Burlington, VT: Gower Publishing Limited.
- Lankau, M. J., & Scandura, T. A. (2007). Mentoring as a forum for personal learning in organizations. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Lashway, L. (2003). Inducting school leaders. Retrieved February 21, 2012, DOI: <http://scholarsbank.uoregon.edu/jspui/bitstream/1794/3399/1/digest170.pdf>
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, MA: Cambridge University Press.
- Leithwood, K., Louis, K.S. Anderson, S. & Wahlstrom, K. (2004). *Learning from leadership project*. The Wallace Foundation, (pp. 3-31). The University of Minnesota; The University of Toronto. doi: <http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/documents/how-leadership-influences-student-learning.pdf>
- Levine, A. (2006). Educating school leaders. Retrieved February 21, 2012, DOI: http://www.edschools.org/pdf/Embargoed_Report_050315.pdf
- McCauley, C. D., & Guthrie, V. A. (2007). Designing relationships for learning into leader development programs. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of*

- mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27: 415-444.
- McGowan, E. M., Stone, E. M., & Kegan, R. (2007). A constructive-developmental approach to mentoring relationships. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Merriam, S. (1983). Mentors and protégés: A critical review of the literature. *Adult Education Quarterly*, 33(3), 161-173.
- Merriam-Webster Dictionary. The meaning of the word 'embed'. DOI: <http://www.merriam-webster.com/dictionary/embedded>. Accessed November 2012.
- Milstein, M. M., & Krueger, J. A. (1997). Improving educational administration preparation programs: What we have learned over the past decade. *Journal of Education*, 72(2), 100-116.
- Mullen, C. A., & Cairns, S. S. (2001). The principal's apprentice: Mentoring aspiring school administrators through relevant preparation. *Mentoring and Tutoring*, 9(2), 125-152.
- Noddings, N. (1984). *Caring a feminine approach to ethics and moral education* (2nd ed.). University of California Press. Berkeley CA.
- Noe, R. A. (1988). An investigation of the determinants of successful assigned mentoring relationships. *Personnel Psychology*, 41(3), 457-479.

- Orland-Barak, L., & Hasin, R. (2010). Exemplary mentors' perspectives towards mentoring across mentoring contexts: Lessons from collective case studies. *Teaching and Teacher Education, 26*(3), 427-437.
- Orr, M. T. (2011). Pipeline to preparation to advancement: Graduates' experiences in, through and beyond leadership preparation. *Educational Administration Quarterly, 47*(1), 114-172.
- Petzco, V. (2008). The perceptions of new principals regarding the knowledge and skills important to their initial success. *NASSP Bulletin, 92*(3), 224-250.
- Ragins, B. R., & Kram, K. E. (2007). The roots and meaning of mentoring. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Rockinson-Szapkiw, A. J. Statistical tutorial: the doctoral journey. DOI: March 20, 2014, <https://www.youtube.com/watch?v=gABEOb4mV8Q>
- Rocky Mountain University. How to use SPSS: Choosing the appropriate statistical test. DOI: March 20, 2014, http://www.youtube.com.erl.lib.byu.edu/watch?v=DcS6_I63PHs
- Singh, R., Ragins, B. R., & Tharenou, P. (2009). What matters most? The relative role of mentoring and career capital in career success. *Journal of Vocational Behavior, 75*(1), 156-67.
- Turban, D. B., Dougherty, T. W., & Lee, F. K. (2002). Gender, race, and perceived similarity effects in developmental relationships: The moderating role of relationship duration. *Journal of Vocational Behavior, 61*(22), 240-262.

- Turban, D. B., & Lee, F. K. (2007). The role of personality in mentoring relationships. In B. R. Ragins, & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research, and practice* (pp. 323-344). Thousand Oaks, CA: Sage Publications, Inc.
- Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*, *61*(4), 674-698.
- van Emmerick, H., & Sanders, K. (2004). Social embeddedness and job performance of tenured and non-tenured professionals. *Human Resource Management Journal*, *14*(1), 40-54.
- Vygotsky, L. S. (1978). Interaction between learning and development. In Cole M. (Ed.), *Mind in society: The development of higher psychological processes*. (pp. 79-91). Cambridge, MA: Harvard University Press.
- Wanberg, C. R., Kammeyer-Mueller, J., & Marchese, M. (2006). Mentor and protégé predictors and outcomes of mentoring in a formal mentoring program. *Journal of Vocational Behavior*, *69*(3), 410-423.
- Williams, E. J., Matthews, J., & Baugh, S. (2004). Developing a mentoring internship model for school leadership: Using legitimate peripheral participation. *Mentoring and Tutoring*, *12*(1) 53-70.
- Yirci, R., & Kocabas, I. (2010). The importance of mentoring for school principals: A conceptual analysis. DOI: 12 February 2011, <http://cnx.org/content/m34197/latest/>